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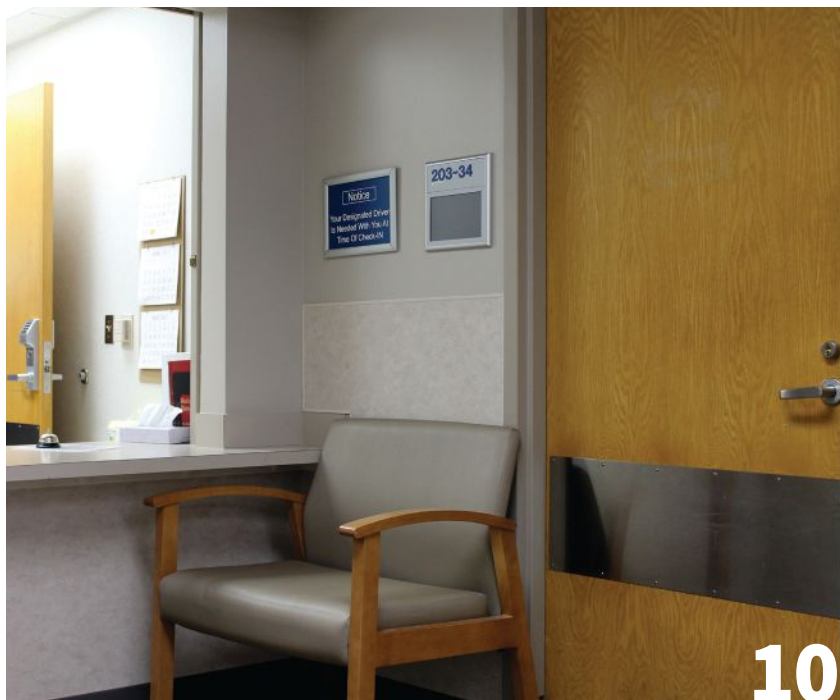
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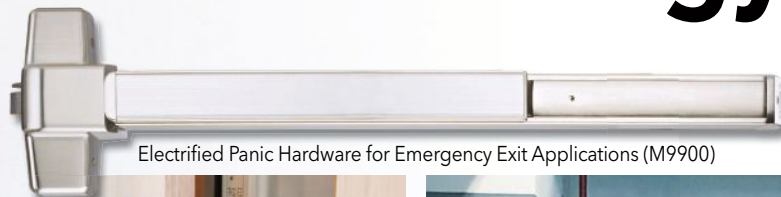
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State of the Industry:

Locksmith Ledger analyzes the results of our survey of qualified subscribers to paint a picture of the forces affecting North American locksmiths and security pros and quantify those effects on market performance. Subscribers can download the full 2021 end-of-year report at www.locksmithledger.com/21239611.

COVID-19 Coverage:

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Locksmith Nation Speaks and We're Listening

I recently was invited to join the Locksmith Nation private Facebook group by its administrator, locksmith Wayne Winton. This is a relevant and highly active group.

After I signed on, Winton posted the following query: "How many of you read Locksmith Ledger magazine? What do you like about it? What would you improve if you could?" Oh boy, what could go wrong with this question? Well, nothing!

To date, there have been more than 70 comments, with the majority being constructive and respectful — proving once again if your magazine is among the oldest security publications in the world, there's a lot to like.

Here's some feedback we took to heart:

- "I get [The Ledger], but since I feel it's more commercial-oriented, they just stack up. I'm geared up more for auto and residential, with some business rekey or lock repair."

Stephen, we'll strive to provide a more balanced approach to residential locksmiths. However, commercial is where the business has headed.

- "I actually read it back when there was more content than ads. But now, it's so ad-heavy, I think even their content is an attempt at sales."

Jason, as much as we miss the heftier Ledgers, the cost realities of publishing require advertising. Our advertisers are allies who help us to bring you informative content. But make no mistake: Our mission is to bring you solid and vendor-agnostic content on technical stories. We'll feature vendors when we discuss products, though.

- "For those discussing the ad consumption of the journal(s), consider that SOMEONE has to pay for the magazine's production. The majority of those costs were carried by advertising. As I recall, the Reed Reporter capitalized on having less advertisements but slowly realized the subscriber income alone wasn't enough to sustain the magazine. Nobody would pay a necessary adjusted subscription price to compensate."

John, you're on the money. When I took over Locksmith Ledger from Bill Reed in 1993, we had more than 24,000 paid subscribers. When you add that subscription base to advertising revenue, that's why we could produce a 200-page magazine monthly. Those days are long gone. The goal continues to be how best to serve our readers. But if locksmiths don't pay for it, we have to rely on advertisers.

- I [get The Ledger], and it is still a great locksmith journal. There needs to be more support from the industry.

Russell, thanks! We can survive only with the industry's support. The locksmith market is changing. Locksmith Ledger has changed with it. Our team of editors, Will Christensen and Emily Pike, along with old and new contributors, strive to stay relevant every issue. We appreciate the support!

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1233 Janesville Ave
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920-563-6388 • 800-547-7377

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Editorial Director Steve Lasky
847-454-2719
slasky@endeavorb2b.com

Senior Editor Will Christensen
847-496-3815
wchristensen@endeavorb2b.com

Managing Editor Emily Pike
epike@endeavorb2b.com

Contributing Editors
Tim O'Leary • Cameron Sharpe • Steve Young

SALES
Group Publisher Nancy Levenson-Brokamp
847-454-2702
nbrokamp@endeavorb2b.com

Sales Representative Brian Lowy, 847-454-2724
brlowy@endeavorb2b.com

Classifieds & Marketplace Jesse Gonzalez, (224) 303-0611
jgonzalez@endeavorb2b.com

Art Director Kayla Burger
kburger@endeavorb2b.com

Production Manager Jane Pothlanski
jpothlanski@endeavorb2b.com

Audience Development Manager Delicia Poole
dPoole@endeavorb2b.com

LIST RENTALS
Account Executive InfoGroup, Michael Costantino
Michael.Costantino@infogroup.com
402.836.6266
InfoGroup, Kevin Collopy
Kevin.Collopy@infogroup.com
402.836.6265

ENDEAVOR BUSINESS MEDIA, LLC
CEO Chris Ferrell
President June Griffin
CFO Mark Zadel
COO Patrick Rains
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EVP, Group Publisher Lester Craft
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SUBSCRIPTION CUSTOMER SERVICE
888-556-2272
circ.locksmithledger@omeda.com
P.O. Box 3258 • Northbrook, IL 60065-3258

ARTICLE REPRINTS
Brett Petillo, Wright's Media 877-652-5295, ext. 118
bpetillo@wrightsmedia.com

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Security for Small Medical Facilities

Although all facilities require different solutions, some basics are universal.

When it comes to providing security at healthcare facilities, hospitals and large medical complexes likely have in-house lockshops and a professional security director or chief security officer. Smaller facilities, however, generally depend on local service providers for physical security and door hardware services.

This article will discuss problems the many thousands of smaller medical offices face and where you'll find opportunities to build your business.

The Marketplace

Doctor's offices, small medical plazas, dentists, urgent-care facilities, specialty clinics, diagnostic centers and independent pharmacies are most likely to use local lock and security services. A common thread runs through all these facilities, but there are important differences.

Of the 600,000-plus doctors in the United States, about one-third are likely to be found in independent medical office facilities, according to the Agency for

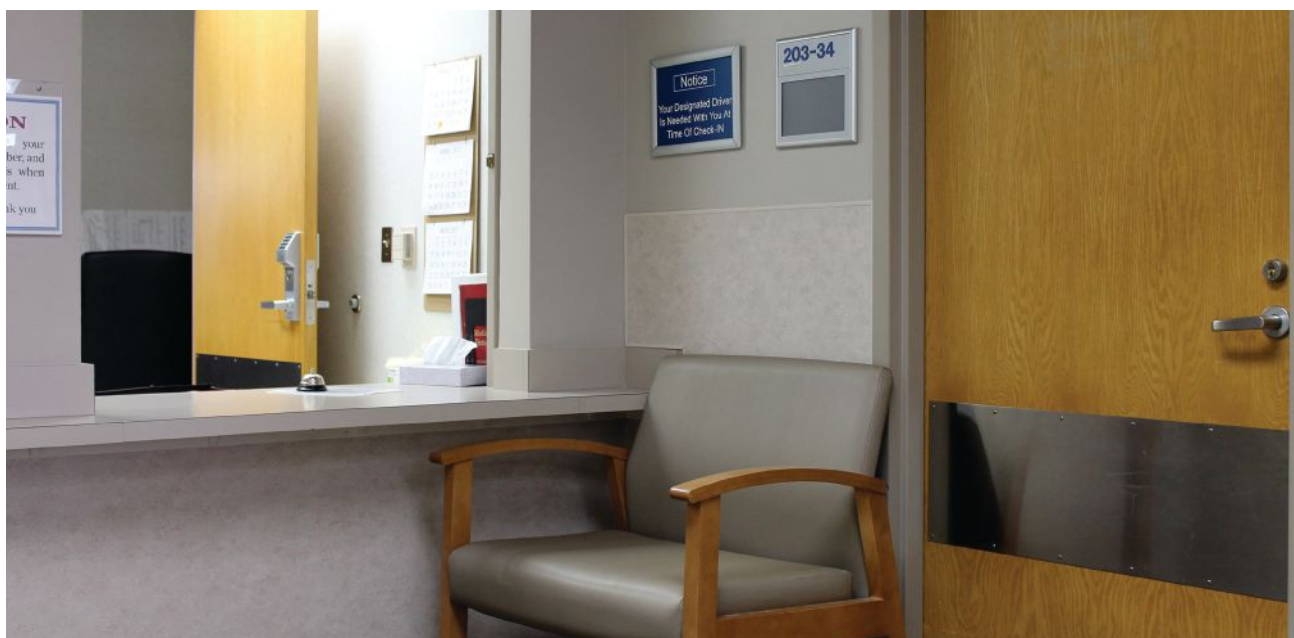
Healthcare Research and Quality. Others will work in larger clinics or hospitals. This means there are many thousands of doctor's offices.

You also will find thousands of dentists, pharmacies and other medical offices. Another market segment includes group homes, post-acute-care facilities (PACs), assisted living, skilled nursing facilities and memory care. Of course, each market has slightly different requirements.

Potential Threats

Among the many potential threats that exist, each office will consider some as unlikely and others as necessary to address. The type of facility, physical structure, public interaction, neighborhood, types of medicines available and clientele will drive the security equation. Your job will be to review the realistic threats, survey the door, cabinet and locking hardware and help the owner or manager to plan a cost-effective defense.

You might find it helpful to provide a healthcare



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security checklist so the owner or manager can do their own internal survey and begin to think about goals and solutions. A good place to start is LockNet's Physical Security Checklist, found at locknet.com.

A few threats to consider:

Riots/Arson: We've seen a lot of civil unrest recently. Some insurance policies might exclude riot, war or civil unrest losses. Reinforced doors, locks and security window films can provide a small medical facility with some protection.

HIPAA: These federal regulations require strict storage, handling and dissemination of patient medical information. Effective physical or electronic access controls are imperative to protect paper or electronic records. Doors, file cabinets and servers must be secured. Internal key control protocols are extremely important as well. (Read more at "Locking Down HIPAA Compliance," page 14.)

Theft: Internal theft is another area of concern at small (as well as large) medical facilities. Expendable medical supplies, tissues, toilet paper and office supplies often are thought to be an employee benefit when they aren't.

A two-part procedure has proven effective. The first part is establishing a policy and expectations of employees. If they know that supply pilferage isn't tolerated, most will comply.

The second issue is having supply storage areas locked. A security director at a

small hospital once confided that these two simple procedures reduced theft by tens of thousands of dollars annually.

Medicines: Since the 1960s, pharmaceuticals have been a diversion, burglary and robbery magnet. One small medical office had periodic break-ins that targeted low-level Schedule IV drugs, such as Valium or Ativan. When this office quit stocking the pharmaceuticals, the break-ins stopped.

Stolen or counterfeit prescription pads also were common until the advent of E-Prescribing of Controlled Substances (EPCS) dramatically reduced that problem. EPCS remains the preferred prescription process today.

Violence: Doctor's offices usually are safe places but not always. Clinics that handle psychiatric patients tend to experience considerably more violence, and even small family practices might have an irate family member from time to time.

In addition to staff training, access from the patient waiting room to treatment and consultation areas must be well-secured. At the least, a strong door and storeroom function lock are necessary, with electronic access control (EAC) recommended. The receptionist area should be accessed from the waiting room only through a window and include an alarm button to warn medical staff of threats.

Sabotage: The Internet of Things has become a daily reality. Burglars generally don't steal microscopes, dental equipment or X-ray machines, but disgruntled employees sometimes sabotage the equipment. Controllers, computer connections and servers have to be in a secured area and protected from water, temperature extremes and electrical power issues.

A variety of additional threats also can include environmental factors, such as weather, fire, flood and earthquake, as well as power disruptions. Although these might not be your areas of

expertise, the client has to consider the probability and potential effect of each.

Market Details

A few issues are common to most small medical facilities. These businesses all require Grade 1 mechanical locks or EAC to treatment areas to defend against uninvited guests. Alarm systems, secure records and pharmaceutical storage, a protected receptionist area and an internal annunciator to warn medical staff are necessary. Supply rooms and any pharmaceutical storage areas have to be locked. CCTV plus a reinforced door to treatment areas typically are recommended also.

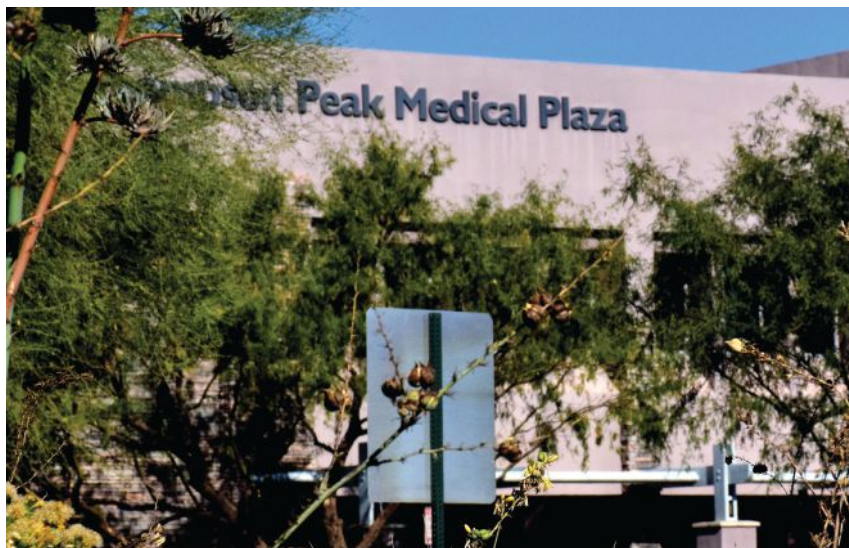
Specific types of facilities require different considerations:

Doctor or dental offices generally are the least complex but often require door and lock upgrades. They should defend against hostile entry and protect records, pharmaceuticals and supplies.

Medical plazas and diagnostic centers generally will be larger and have automated doors and multiple interior offices. These buildings likely will have an EAC system, and the doors from the patient waiting area will be well-secured. Purpose-built facilities such as these should have commercial doors and hardware, which come with the normal lock, closer, hinge and exit device maintenance issues. These facilities also have to secure supplies, patient records and server rooms. CCTV in public areas is advised, because threats of violence are probable.



» MicroIQ Drawer Lock



» Medical plazas typically will have an access control system.

Nursing facilities cover a rather broad category. An interesting segment is the assisted-living group home. These often are small businesses that own one to six residences that provide assisted living or skilled nursing for four to six residents. These residential facilities keep low-level medications secured on-site but try to avoid more-potent pharmaceuticals.

Exterior doors often will be double-keyed to prevent patients from wandering off. Existing locking arrangements might not meet code, so they might provide upgrade opportunities. Group homes don't tend to be burglary targets, but hostile relatives can be a problem. Group homes are cost-sensitive.

Post-operative care, assisted-living or skilled-nursing facilities tend to be considerably larger and include EAC on most exterior doors and a reception-screening area at the entrance. Entrance doors often are automated.

These facilities could have several wings that hold 50 or more rooms. In larger facilities, doors to patient rooms will be configured for automatic closure when the fire-alarm system is activated. Pharmaceutical storage will be in a locked room that includes secured cabinets. Larger facilities don't tend to be robbery targets, because they aren't accessed easily

from outside, but internal diversion is a constant threat. Effective internal key-control procedures are critical.

Memory-care facilities will be locked down to prevent patient elopement. Fire codes will require door release upon alarm, but violations can lead to tragedy and jail time. In some cases, patients wear a transmitter that locks exterior doors as they approach. Many facilities opt for the less expensive approach of locked hardware (often maglocks) and some form of EAC for entrance and exit. Single-code keypads aren't recommended, because the code quickly can become common knowledge.

Pharmacies are particularly vulnerable to pharmaceutical diversion, burglary and robbery. These have a 14% annual probability of burglary, robbery or employee pharmaceutical theft, according to Healthcare Consultants Pharmacy Staffing. The Centers for Disease Control and Prevention also estimates that more than 7 million Americans are abusing pharmaceuticals. This issue presents a growing pool of potential threats.

Chain pharmacies generally will have a corporate security program, but privately operated pharmacies likely will welcome your professional help.

In recent years, considerable emphasis

has been put on tracking the provenance of pharmaceutical sourcing. Each step, from manufacture through shipping and warehousing, is documented. This procedure has reduced diversion, transit theft and inferior-product substitution significantly.

Physical barriers, EAC, time-delay vaults and CCTV reduce the incidence of robberies. Secure vaults have reduced the success rate of after-hours robberies significantly, while electronic dispensers improve accuracy and internal accountability.

Hardware Notes

Keep in mind that although CCTV systems can be a great deterrent, they come with legal guidelines. Cameras can be used only in public areas or areas where there's no expectation of privacy. This generally includes the patient waiting room and might include the office area and records vaults. Treatment-area hallways might be sensitive to privacy issues. A prominent notice should be posted. Recorded data has to be in a locked area, password-secured and routinely deleted or overwritten after a reasonable time.

Reinforcing a door from the waiting room to treatment areas, along with a Grade 1 cylindrical or mortise lock, is probably the No. 1 thing any healthcare facility should consider. EAC is helpful to document building access and to control access from the patient waiting room to treatment areas and records storage.

Supply or pharmaceutical storage areas, internal pharmaceutical cabinets or drawers and medical record files have to be locked and must include EAC or good internal key-control procedures.

Of course, each facility is different. Small medical facilities might not have a lot of hardware, but there are a lot of small medical facilities. It can pay to work in this discipline. ■■

Cameron Sharpe, CPP, worked 30 years in the commercial lock and electronic access industry. Contact him at sharpec@cox.net.



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Locking Down HIPAA Compliance

Protecting patient records is federal law and requires multiple layers of security.

Healthcare generates a massive amount of records, and protecting those records is an essential function of any healthcare facility because of the Health Insurance Portability and Accountability Act (HIPAA).

The act has received a fair amount of attention in the public eye over the past year, specifically what constitutes a violation and what doesn't. What doesn't: You being asked to volunteer your health information. What does: a healthcare facility allowing your medical records to be viewed by others.

How maintaining the privacy of a patient's records is accomplished can vary from one facility to the next. HIPAA has no specific requirements that pertain to security, only that "policies and procedures to safeguard the facility and the equipment therein from unauthorized physical access, tampering and theft" are enacted. Those policies and procedures are left entirely up to the facility, and "any security measures" that allow the facility to comply are acceptable.

That means that security pros have to be on their toes when they work in the area of protecting healthcare records, says Tony Kasper, owner of Athens Door and Lock in Athens, Tennessee. Kasper has been an institutional locksmith for more than 25 years, including work at the Vanderbilt University and University of Tennessee hospitals.

"A lot of times as a locksmith, you need to talk about a procedure" when it comes to achieving HIPAA compliance. "You can have the best lock in the world on a door or on a cabinet, but if [people] don't use it properly, you're defeating the purpose

of it." And the facility is being put in possible violation of HIPAA.

Big Vs. Small

Having a secure record-keeping procedure is necessary to any healthcare facility. HIPAA sees no difference between a large hospital and a single-practice doctor's office. Both places must protect patient records and could face severe penalties if they fail.

Of course, the requirements of how to secure records at those locations will differ because of the size of the building or office and the number of records that might be kept there. Plus, records at larger facilities are more likely to be stored digitally in addition to physical backups in files and file cabinets and,



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because of the sensitive nature of the records, kept on servers in the building rather than in the cloud.

This presents additional scenarios that have to be taken into consideration when it comes to providing security. For example, Erin Wilson, manager of influencer education at dormakaba, points out that record-storage rooms and computer server rooms typically are fire-rated, which means that modifications to doors to those rooms are limited by local life-safety codes. This, in turn, could limit potential solutions, particularly if adding electronics is involved.

“If the opening is fire-rated, you can’t just cut that frame to put an electric strike in,” she says.

Then, there are the number of people who might require access to such records. Obviously, out of practical necessity, a larger facility will want to allow more people to have access to patient records than a small facility. Plus, the records and the people who would access them might be located in different parts of a medical campus. This also applies to people who have access to records digitally as well as physically.

“You’re dealing with a myriad of different things,” Kasper says.

Fitting Solution

However, one thing that’s universal is that all healthcare facilities have a finite budget for security. Naturally, smaller facilities typically won’t have as much to spend as larger facilities.

“You can suggest a number of things to them to secure their records, but they’re dealing with what limited resources they have,” Kasper points out. The trick then is making sure that the solution works with the customer’s budget.

For smaller facilities, Kasper suggests starting with the actual file cabinets that hold patient records. Security

pros should make sure the cabinets are fire-rated but also that the locks go beyond operating via a standard flat key. If an electronic lock or a high-security keyway is out of the budget realm, he recommends a tubular keyway, because not every locksmith, to say nothing of hardware stores, will be able to make a tubular key for someone. Of course, that key, no matter the type, still has to be protected, and security pros have to make sure awareness of that is part of the transaction.

“A lot of times, what I find is they’ll take the key — and it could be a tubular key or even a high-security key — put it on a key ring and just put it right in the [desk] drawer, [and] the drawer won’t be locked,” Kasper says. In such a scenario, anyone could use the key and gain access to a cabinet and, thus, a patient’s records. “That’s defeating the purpose” of your locking system.

This highlights what Benjamin Williams, director of product management at ASSA ABLOY Electronic Security Hardware, calls “concentric layers” of security to protect healthcare records. In other words, protecting healthcare records requires multiple layers of security, and that goes for electronic access control (EAC) as well as mechanical locks.

It isn’t enough simply to control access to patient records to certain people during certain times of the day, he says. You also have to lock the rooms that hold the records, be they in files or server cabinets, and finally the cabinets themselves. And you have to make sure you have secure credentials.

“[Protecting records] is very much part of a holistic security plan” for any healthcare facility, Williams says.

Going Electronic

As healthcare facilities become larger and the task of protecting records more intricate, it seems natural to move into electronic solutions, particularly EAC.



» Codelocks KL1100 RFID

EAC brings several features to bear that mechanical systems can’t, including audit trail capability that creates a record of who accessed a lock when — and, perhaps more important, when access attempts were unsuccessful.

Another important benefit of electronics is convenience. Matt Welty, vice president, Americas of Codelocks, says no matter the solution to protect healthcare records, it should do two things: It has to work, and it has to be convenient enough to use so it IS used and, thus, proper HIPAA compliance procedures are followed.

For example, the most secure cabinet lock can be defeated easily by an employee who finds it inconvenient to unlock it every time they have to access the cabinet if they must do so multiple times during the day, he says. “The more difficult or cryptic the access to the records is, the less likely it is that they’re going to comply with that. They [think], ‘I’ll leave the door open, so I’ll come back in 10 minutes and get something else out.’” In the meantime, the records are left unprotected.

Kasper, who calls himself an “old-school locksmith,” sees the advantages of electronic locks and EAC in the right



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Cover Focus: Healthcare Solutions

setting. He says the ideal scenario in a large facility's records room would be a fail-secure EAC lock for entrance and a separate egress door that can't be opened from the outside, "because not only as a locksmith do you have to consider security, but you also have to consider safety."

The key before doing anything, however, is talking with the customer and finding out their requirements as well as budget, Kasper adds. He calls it a "checklist" of ground to cover in the service of "what can I do to make this lock, cabinet door, whatever it is, more secure?"

And then you have to communicate back to the customer in words they understand. "A lot of times you can lose a customer when you start talking technical," Kasper says. When putting together a security report that lays out upgrades and other solutions, he says he never uses terms such as "fail-secure," because they're meaningless to the layperson.

"You put it to where they understand it, and then they say, 'Oh yeah. Let's get this done.'"

Depending on the scenario and budget, here are a few solutions that can help facilities to achieve HIPAA compliance:

Codelocks KL1100 RFID, CL5500 Series

The KL1100 RFID is part of Codelocks' Kitlock series of cabinet locks; the CL5500 Series is a smart door lock. Both are battery-powered locks that can be used to make healthcare facilities comply with the spirit of HIPAA. But Welty adds that both satisfy the ease-of-use requirement necessary to allow employees to adhere to HIPAA compliance, because they use the same prox credentials.

"The users for that [records] room could be programmed into that lock, and then, inside that room, their prox



» Codelocks CL5500

could give them access to all the cabinets or just some of the cabinets where the

information is stored," he says. Both provide audit trail capability, the door lock remotely via the K3 Connect app.

Further, the KL1100 allows for opening via card, sticker or bracelet, which makes for an easier and quicker method of accessing than a PIN or even a smartphone, Welty adds.

The CL5500 Series includes tubular latch, mortise and panic trim options.

More info: www.codelocks.us

CompX 150 Series, 200/300 Series

CompX's range of eLock cabinet locks has convenience in mind. In addition to being easy to retrofit, the locks also have motorized latching, which allows for automatic relock upon closing.

Mitch Mlynarczyk, CompX vice president of technology and sales, says



» CompX eLock 150 Series

the most important feature of the locks with respect to convenience, however, is that all three can use existing credentials when installed as part of an upgrade.

"Healthcare's No. 1 want as far as features was the ability to use existing credentials," he says when discussing HIPAA. "Yes, audit trails and providing security, that's a given, but their No. 1 want was the convenience of using existing credentials."

All three locks provide audit trail, but the big difference is in the number and method. The 150 has a 1,500-event audit trail. The 200/300 have 15,000, and the 300 has Wi-Fi capability, so the audit trail



» CompX eLock 200/300 series

can be entered into an EAC system remotely. (Wi-Fi capability also allows for low-battery and door-ajar alerts.)

More info: www.compixelock.com

BEST Switch Tech

The Switch Tech smart cylinder by dormakaba division BEST is aimed at assisting with HIPAA compliance, Wilson says, because it accomplishes all of the goals of a standard EAC system. It can be used on cabinets and doors, and it provides the convenience of using the same mobile credential on both. It also provides remote audit trail capability of up to 3,200 events.

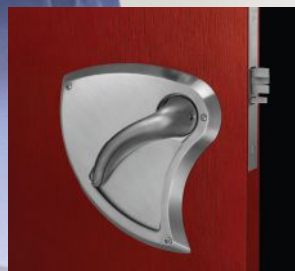
However, it also brings this to a records room door without having to worry about how the upgrade might affect the door's fire rating, because it doesn't change the door, she adds. "You just change out the small-format core,

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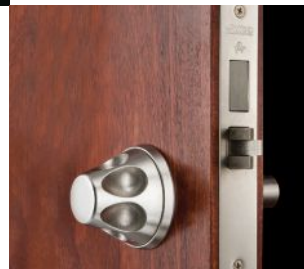
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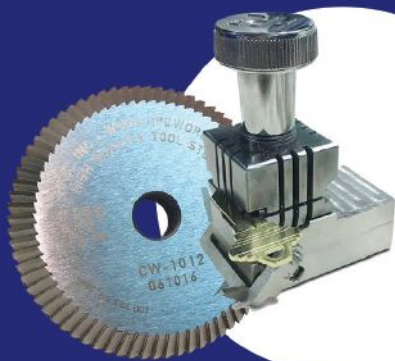
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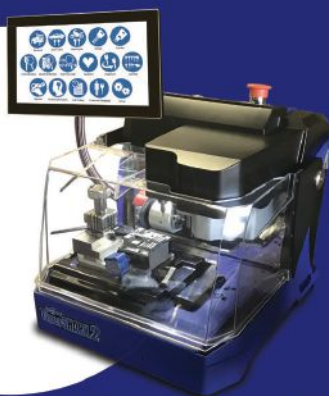
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Cover Focus: Healthcare Solutions

put the Switch Tech in, and you're good to go."

The battery-powered Switch Tech can be retrofit into almost any small-format interchangeable core in minutes and integrated with existing access control software. It can be accessed by fob or smartphone app.

More info: timeforaswitch.com

HES K Series, KS Series

The K and KS series of cabinet locks by ASSA ABLOY company HES are aimed at securing patient records, whether physical or digital. The K Series is meant for standard cabinets; the KS Series is meant for server cabinets.

Williams points out that the KS Series is notable for its



range of options, starting with a mechanical swing-handle option (KSM) that can include a small-format interchangeable core and even a Medeco X4 electromechanical core. The KS100 provides wireless access control through ASSA ABLOY's Aperio technology.

At the top are the hard-wired KS200 and KS210. The KS210 is a recent addition to the lineup. Unlike the

» HES K100 Series



» HES KS210

standard Wiegand KS200, the KS210 incorporates RS-485 Open Supervised Device Protocol (OSDP) wired communication. OSDP is a new standard issued by the Security Industry Association to allow for improved device interoperability and stronger (AES128) encryption than Wiegand. Williams says the KS210 is the first of its kind in the market. The KS210 also allows for Bluetooth mobile credentials.

The K Series includes wireless Aperio (K100) and wired Wiegand

(K200) versions.

More info: www.assaabloyesh.com

SALTO XS4 Locker, Neo

Don't let the name fool you: SALTO's XS4 locker lock isn't just for lockers but a HIPAA solution for file cabinets, says Paul Cannon, vertical business lead, healthcare.

“We find these are very popular in the cabinet areas where they need that security for those HIPAA laws,” he says.

The battery-powered lock can be accessed via card, fob, wristband or smartphone and has audit trail and remote access control capability.

The Neo is SALTO's smart cylinder, which comes in a variety of options for different applications. One of them is the half cylinder aimed at computer server racks. Cannon says the cylinder is designed to fit most swing-handle latches and bring access control and the same credential flexibility as the XS4 Locker lock to server cabinets.

“I always bring up the point, ‘OK, you have 20 server racks inside of that room. When someone gains access in there, do they have free rein to every



» SALTO Neo

single rack, or are each one of those auditable,” he says. “They just say, ‘Yeah. We’re good, because we have the perimeter doors locked, and we know

when someone goes in there,’ but do they really know?”

More info: saltosystems.com/en-us ■■

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Model Code Comparison: **CONTROLLED EGRESS**

As is the case with delayed egress, not all codes are the same for the more-limited locking system.

A previous Locksmith Ledger article (“Model Code Comparison: Delayed Egress, October 2021”) addressed the model code requirements for delayed-egress locks, which under normal operation delay egress for 15 seconds, or 30 seconds when approved by the Authority Having Jurisdiction (AHJ).

For many years, delayed-egress locks were the most restrictive hardware that could be used on the egress side of doors in healthcare facilities, but this application wasn’t feasible for every location. For example, in a memory-care facility, a patient who exhibits exit-seeking behavior could activate the lock repeatedly, initiate the audible alarm and possibly even leave the facility unaccompanied if a staff member didn’t respond in time.

Beginning with the 2009 editions of the model codes, sections were added to give certain types of healthcare facilities a more secure option for their egress doors. There were a few changes to these code sections over subsequent editions, and the term “controlled egress lock” since has become the commonly used term for this application.

These locks are allowed by the model codes in healthcare facilities where patients require containment for their safety or for security. During normal operation, the doors don’t allow free egress. If evacuation were necessary, the doors would be unlocked by one of the required emergency overrides or by facility staff. The release methods required by the model codes are intended to help to ensure a balance



of life safety and security.

This article will compare the requirements of the I-Codes, such as the International Building Code (IBC) and International Fire Code (IFC), with the NFPA codes such as NFPA 1 – Fire Code, NFPA 5000 – Building Construction and Safety Code and NFPA 101 – Life Safety Code. States and local jurisdictions may modify these model codes, and requirements can vary from one edition to the next. It’s crucial to check the adopted codes to verify the requirements for a specific project’s location.

Classifications

Remember that this application applies only to certain types of healthcare units and isn’t allowed by the model codes in other use groups or occupancy types. The model codes describe the locations for controlled-egress locks in different ways, but the intent is that they’re allowed in healthcare facilities where the clinical needs of patients require their containment. These locks aren’t allowed in every type of healthcare unit.

The purpose of this system is to prevent elopement, for example, to prevent a patient who has dementia from leaving a facility unaccompanied. The typical locations for controlled-egress locking systems are

memory-care units, behavioral-health treatment areas, maternity wards and newborn nurseries, and possibly emergency departments or pediatric areas, depending on the AHJ's interpretation.

I-Codes. The I-Codes allow controlled-egress locks in Institutional Use Groups I-1 and I-2, where the clinical needs of patients who receive care require their containment. Before the 2015 edition of the I-Codes, this section was limited to Use Group I-2. Use Group I-1 includes buildings where more than 16 people (excluding staff) reside in the facility on a 24-hour basis and receive custodial care in a supervised environment. Examples of these facilities are alcohol- and drug-rehabilitation centers, assisted-living facilities, congregate care facilities, group homes, halfway houses, residential board and care facilities and social-rehabilitation facilities.

Institutional Group I-2 includes buildings used for medical care on a 24-hour basis for more than five people who are incapable of self-preservation. Examples of I-2 occupancies are foster-care facilities, detoxification facilities, hospitals, nursing homes and psychiatric hospitals.

NFPA. The NFPA codes address controlled-egress locks in the occupancy chapters related to new and existing healthcare occupancies and ambulatory healthcare. In these occupancies, controlled-egress locks are allowed where patient special needs require specialized protective measures for their safety.

Both sets of model codes allow some of the automatic-release methods to be omitted on doors that serve areas where specialized security measures are necessary, including behavioral-health units and maternity areas where listed child-abduction systems are in use.

Fire Protection

I-Codes. For controlled-egress systems, the IBC requires the building to be equipped throughout with an automatic sprinkler system or approved automatic

smoke- or heat-detection system.

NFPA. The NFPA codes require the facility to be protected throughout by a supervised automatic sprinkler system AND either a complete smoke-detection system throughout the locked space or the ability to remotely unlock doors from an approved constantly attended location within the locked space.

Action Upon Emergency

I-Codes. When the fire alarm or sprinkler system is activated, controlled-egress locks must unlock and allow free egress, but, as stated previously, there are exceptions for some types of units. The IBC doesn't require the locks to release automatically upon fire-alarm or sprinkler-system activation when installed on doors that serve psychiatric or cognitive treatment areas or for units where a listed child-abduction system is in use.

NFPA. The NFPA codes require controlled-egress locks to unlock for immediate egress upon activation of the smoke-detection system or upon waterflow in the automatic sprinkler system. NFPA doesn't require the automatic release where patients require specialized security measures or pose a security threat.

Action Upon Power Failure

I-Codes & NFPA. When power fails, both sets of model codes require controlled-egress locks to unlock immediately in the direction of egress, but again, some units are exempt from this automatic release — psychiatric or cognitive treatment areas and locations where a listed child-abduction system is used. The NFPA codes don't require controlled-egress locks to unlock upon power failure in units where patients require specialized security measures or pose a security threat. And similar to delayed-egress locks, the codes aren't specific about backup power, but separate battery backup in the power supplies for these locking systems isn't recommended.

Remote Release

With the exception of psychiatric and cognitive treatment areas, locations that have child-abduction systems and units where patients pose a security risk, controlled-egress locks must be able to be released by a remote switch.

I-Codes. The IBC states that the switch must break power to the lock directly and specifies that the remote release must be located at the fire command center, nursing station or other approved location.

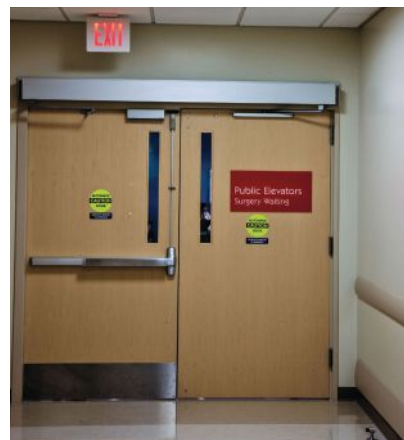
NFPA. The NFPA codes allow a remote release switch to be used as one of the options for rapid removal of occupants. In new occupancies, remote control of the doors must be from within the locked area.

Staff Release

I-Codes. Where controlled-egress locks are installed, the IBC requires all clinical staff to be able to release the locks. Staff members must carry the keys, codes or other credentials to unlock the doors, and these procedures have to be part of the emergency plan for the facility.

NFPA. The NFPA codes also require clinical staff to be able to unlock the doors at all times. Three options are allowed by NFPA to facilitate the rapid removal of occupants:

- Remote control of the doors.



» Controlled-egress locking systems are much more restrictive than their delayed-egress counterparts.

Allegion

- Keys carried by staff at all times.
- Other reliable means always available to staff.

Emergency Lighting

I-Codes. As with delayed-egress locks, the IBC requires emergency lighting on the egress side of a door that has a controlled-egress lock.

NFPA. The NFPA requirements for controlled-egress locks don't reference emergency lighting.

Quantity of Locks

I-Codes. The I-Codes state that building occupants must not be required to pass through more than one door that has a controlled-egress lock before entering an exitway — for example, before entering a stairwell. Again, psychiatric and cognitive treatment areas and units that have child-abduction systems are exempt from this limit.

NFPA. The NFPA codes limit new occupancies to one controlled-egress lock per door. The AHJ could approve additional locks for existing occupancies. However, these codes don't limit the number of doors in an egress path that are equipped with controlled-egress locks.

Further Reading

For more on codes and controlled-egress locks:

IBC sections for Controlled

Egress:

- 2021 – 1010.2.14
- 2018 – 1010.1.9.7
- 2015 – 1010.1.9.6
- 2012 – 1008.1.9.6
- 2009 – 1008.1.9.6

NFPA 101 sections for Door Locking Arrangements in Healthcare Facilities:

- 18.2.2.2.5 (new)
- 19.2.2.2.5 (existing)

Also refer to Ambulatory Healthcare Chapters



Allegion

» Model codes can differ in rules for controlled-egress locks.

Required Listings

I-Codes & NFPA. Both sets of model codes require controlled-egress locking systems to be listed to UL 294 – Standard for Access Control System Units. If a controlled-egress lock will be installed on a fire-door assembly, the lock also must be listed to UL 10C – Positive Pressure Fire Tests of Door Assemblies or NFPA 252 – Standard Methods of Fire Tests of Door Assemblies. In addition to the other listings, panic hardware that includes a controlled-egress feature must be listed to UL 305 – Standard for Panic Hardware (both I-Codes & NFPA) and in some cases BHMA A156.3 – Exit Devices (NFPA only).

Controlled Vs. Delayed

Although there are some similarities between the delayed-egress and controlled-egress codes, several requirements apply to delayed-egress locks that aren't mandated for controlled-egress locks:

- For controlled-egress locks, pushing on the doors or attempting to use the hardware doesn't trigger a timer or signal, and the lock isn't required to release after 15 seconds. The doors remain locked in the direction of egress until released by staff or an automatic release method.

- The model codes don't specify how a controlled-egress lock must be re-armed. This normally is interpreted to mean that the doors are allowed to relock automatically after they're released for egress.
- An audible alarm isn't required for doors that have controlled-egress locks.
- Signage that states how to operate the hardware isn't required by the model codes for controlled-egress locks. However, it could be beneficial to have signage explaining to building occupants what the exiting protocols are.

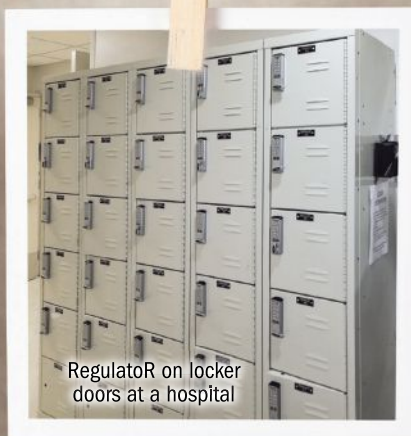
Keep in mind that controlled-egress locks are allowed only in certain types of healthcare occupancies. They aren't allowed by code in other use groups or occupancy classifications.

For more information about controlled-egress locks, refer to the adopted code(s) in the jurisdiction where the building is located, and consult with the AHJ if there are any questions. State or local codes might include modifications to the model code requirements, so it's important to verify the specific requirements that apply to your project. ■■

Lori Greene, DAHC/CDC, CCPR, FDAI, FDHI, is manager, codes and resources at Allegion. Visit her website, idighardware.com.

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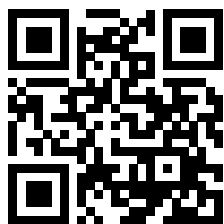


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Behavioral Healthcare Facility Security

Enhanced protection and safety dictate innovations and solutions.



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Potential violence within the halls of a normal healthcare facility has been a growing reality over the past decade, but incidents have increased substantially over the past 20 months as fears from COVID-19 continue. A recent report in EHS Today states that “three-quarters of all workplace assaults occur in the healthcare industry, and workplace violence is even more prevalent in mental health; almost one in five patients admitted to acute psychiatric units may commit an act of violence.”



» Christine Cicchetti



» Grant Heppes

The report warns that patients might be in as much danger as hospital staff when considering violence within mental health facilities. “Patients are at risk if another patient brings in or obtains a weapon or other restricted item while in a facility, and this can create a multiplier effect in which patients try to bring their own weapons in, thinking they need to protect themselves from others.”

Locksmith Ledger recently discussed the issues

of security and safety in behavioral health facilities with several industry experts. The participants include Christine Cicchetti, product manager for hinges and behavioral health access solutions, and Grant Heppes, distribution development manager for electronic access and data, at dormakaba; Mark Berger, president of Securitech Group; William Sporre, vice president of national and international sales and marketing at Marks USA; Tom Morgan, director of business development—healthcare at ASSA ABLOY Opening Solutions; and John Truempy, an institutional locksmith and the first president of ALOA's division for institutional locksmiths.

Because of the magnitude of the subject matter and quality of the discussion, we broke up this roundtable. The second part will run in our March issue.

Q What does the security pro have to know about providing security and safety at behavioral health facilities?

Christine Cicchetti/Grant Heppes: First and foremost, no access device can replace staff supervision fully. The door is a tool that supports nurses and other staff as they respond to the specialized needs of behavioral healthcare patients.

Next, the healthcare industry views behavioral patient care, including safety, from a holistic perspective. Security pros must consider the options for doors and closers from both sides of the opening. Access control solutions must protect the safety of patients and staff from a ligature standpoint while supporting a healing environment. This requires coordination of all aspects of any behavioral healthcare environment, including sound, aesthetics, lighting and security.

The trend is for a less institutional feel to help to reduce patient fear, anxiety and sense of being overwhelmed. The more products that security pros can offer that look more homelike rather than unique to behavioral health, the more likely access products can contribute to a better patient experience. This might sound easy, but the overall evolution won't occur overnight. A high number of behavioral healthcare facilities have been slow to modernize their sites because of budget constraints.

Mark Berger: Security pros have been trained to provide solutions to protect against forced entries. The cream of the crop understands codes and maintaining single-motion egress. Code requirements for panic bars and the necessity for alarmed exit locks have been important elements of many locksmith businesses.

To succeed in the behavioral healthcare world, you have to forget all that. You no longer are concerned about people breaking in, and providing single-motion egress isn't a factor in an occupancy classification that allows locked wards. Where previously you might have interfaced with a facility manager, security director or owner, you'll now take direction

from operational staff, including doctors and nurses, who will guide you through the unique requirements.

Where to start? There are guiding documents, such as the New York State Office of Mental Health's (OMH) Patient Safety Standard Guidelines. It's published twice a year and free to download, and it's a collection of tested products that includes excellent commentary. Another excellent resource is the Behavioral Health Design Guide, now in its 24th revision and update. It also includes a safety risk-assessment tool to align with The Joint Commission's recommendations. Understanding The Joint Commission's goals and requirements is critical to being a valued supplier and professional in this space. Facilities must bring themselves up to The Joint Commission's standards to continue receiving reimbursement from the government. If a facility isn't accredited, that spigot is turned off.

These are the keys to understanding the universe. You're entering a space where protecting patient life by eliminating the opportunity to self-harm is part of every decision.

William Sporre: One important factor is that the ligature-resistant lock-set market is evolving constantly. New product that increases the safety of the hardware continues to be developed. As product is used in the field, changes are required to increase ligature resistance. Keeping in contact with the Builders Hardware Manufacturers Association (BHMA) rating of ligature requirements as well as the testing of manufacturers' products through BHMA and New York OMH will keep the security pro updated on new product as well as ratings on existing product in the field.

Tom Morgan: Whether it's a behavioral health clinic, crisis intervention facility or a detention center, thoughtful and deliberate planning is required when securing a behavioral-health environment. Each behavioral and mental health facility is different, and each faces its own

challenges, particularly when it comes to selecting the right doors, hardware and access control. Factors such as the treatment spaces, the severity of the behavioral condition, gender and risk of harm are important considerations when assessing the requirements of the behavioral-health space.

Several resources are available, but it's important to work with your local authority having jurisdiction (AHJ) to understand what the local and state regulatory requirements are for the legal standards of care that you're required to follow. The NFPA 101 Life Safety Code, for example, is a suggested resource for determining code requirements for new and existing healthcare structures, but there are specific exceptions for behavioral health facilities because of their unique occupancy. Your AHJ will be able to help guide you through the requirements to ensure a safe, secure and compliant facility.

John Truempy: These types of facilities are complex with various levels of people [who are] voluntary compared to involuntary commitment, just to start. The facilities seldom rise to the level of prison, but some could. Each state also has different rules. I started my institutional career at the state-run psychiatric hospital, and even that was divided into levels depending on whether the patient was guilty by reason of insanity or insane but unable to stand trial, or



» Mark Berger



» William Sporre



» Tom Morgan



» John Truempy



Getty Images | Aman Zung

» Behavioral healthcare requires different solutions for different doors at different facilities.

a bunch of other conditions even down to age and health.

Is it a stand-alone facility or a ward in a hospital? If it's just a unit in a hospital, you may have to deal with The Joint Commission that accredits 22,000 U.S. healthcare facilities. You might have to keep the patient in and still meet local fire codes. It's an odd mix. Normal security is trying to keep a bad person out. Prisons try to keep a bad person in. Mix it all together where you have to keep the public out. You might have to keep a person in so they don't hurt others, and that same person might be the biggest threat to himself.

Q How do security pros make themselves smarter about ligature resistance and other safety issues and requirements?

Cicchetti/Heppes: Behavioral healthcare access control needs are site-specific. It's important to work with a professional supplier that can configure a holistic solution that integrates traditional and electronic keys for the best results. Access control manufacturers typically have the best information about their products on their websites.

Manufacturers typically have a wide range of digital, self-guided and in-person training opportunities to help security pros to stay on top of best practices and trends. Forward-thinking facilities will work with a manufacturer ahead of any Joint Commission review to audit their site and identify areas for improvement. This provides a roadmap that serves as a head start for upgrade and compliance budgeting and implementation.

Berger: Manufacturers do an excellent job of providing education on their offerings. Bookmark the pages of different manufacturers and make a point of visiting every so often to see what's new. Hopefully, trade shows will return, and a few are dedicated to the mental-health space. Visit them to see the full breadth of product offerings in the space, not only the door hardware and alarm products that are shown.

Sporre: A few sites are directed towards ligature-resistance hardware, such as New York State OMH as well as BHMA. The OMH website shows a wide range of product, as well as descriptions and pictures.

Morgan: Part of creating a safe and

secure behavioral-health environment is selecting the right doors and hardware to protect patients from harm and maintain a level of security for others, including staff and visitors. Although there are no universally mandated standards for doors and hardware for behavioral- and mental-health environments, regulations, codes and guidelines will help to guide product selection. Be sure to check out local and state regulatory requirements, and work with your local AHJ to ensure you're in compliance. When assessing the requirements of a behavioral or mental health facility, key safety considerations include:

- **Looping opportunities.** Standard door hardware, such as hinges, closers, locksets and levers might give patients possible ligature points.
- **Hanging devices.** Opportunities abound for a patient to hold an object, tie a sleeve or sheet knot and create a makeshift, but effective, hanging device.
- **Tampering possibilities.** Opportunities for patients to tamper gasketing, closures and door fasteners to gain outside access are present.

Truempy: Reading, reading and more reading. Read outside of the normal industry papers. Read white papers. Many government or large institutions have plans and bids posted that you can review for what others did.

Don't follow the hype or sales pitch. Assume the rest of the design team just did an operating room or an office building last, and they just got this dumped on them. Ask questions, and then think and ask more. Try to find that hidden expert, such as the nurse who has worked 25 years in psych care who will tell you more about potential problems than an architect ever will, because they have to know a little of everything and they aren't thinking about just doors. If you're in the commercial world, call your distributor and have them introduce you to an institutional locksmith who works in a hospital that has a psych ward. ■■



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Mechanical Exit Device Overview

Knowing the ins and outs of the variety of exit devices can pay dividends.

An exit device, also known as a panic bar, push bar or crash bar, is architectural hardware that opens a door when someone pushes a bar.

Although originally designed to prevent injuries and deaths at building exit doors, they now are used as the primary door opening mechanism in many commercial buildings, because they also provide convenience and accommodate individuals who have disabilities.

Exit devices often are referred to as crash bars, because that's how people use them — by crashing into them with their bodies, forklifts, gurneys or whatever they're carrying.

The reason the crash bar is there is so the door can be opened for egress without having to grip and turn a lever or knob. Operating it should be apparent enough so anyone can locate it and figure out how to unlatch it, even if the room was full of smoke.

Background

The first version of an exit device was patented in England in 1892, but the devastating fire at Chicago's Iroquois Theater in 1903 inspired the development of the Von Duprin 88 exit device.

The capability of the device to save lives became realized more completely after building codes started to require that openings in buildings that were critical for occupant egress be outswinging and equipped with readily recognizable and simple-to-operate hardware. The exit device then was used extensively in schools, hospitals, theaters, public assembly buildings and houses of worship, among other applications.

Having a knowledge of exit devices and features available is helpful while specifying and making sales.

Types & Styles

Exit devices are available in a variety of types, styles and categories, and they can be mechanical or electronic and tied into an electronic access control (EAC) system. This article is concerned with mechanical exit devices.



» Marks M9900

The Builders Hardware Manufacturers Association (BHMA) divides exit devices into two groups: exit devices and fire exit hardware. The distinction pertains to features.

On an exit device, a dogging device allows the release bar to be locked down so the latch bolt remains retracted and the door remains unlocked. On fire exit hardware, which is labeled for use on fire doors, dogging devices aren't permitted. That's because fire doors must have an active latch.

When you inspect fire exit hardware, there should be a label indicating its applicability. A label on the fire door also should indicate that it's a fire door and should have fire exit hardware, not just a standard exit device.

A fire-rated exit device must meet UL standards to receive the UL listing and must be labeled clearly as such.

There are three basic styles of exit devices:

- **The touchpad style** is the most common style used for modern buildings and allows flexibility for electrification and other options.
- **The crossbar style** is often used when aesthetics dictate a minimal silhouette for glass doors or a vintage look.
- **Recessed panic hardware** reduces the projection of the hardware from the face of the door but requires a large cutout in the door and might limit the door material to hollow metal.

Exit Device Categories

Exit devices fall into three basic categories:

- Rim exit devices
- Vertical-rod exit devices
- Mortise exit devices

Rim exit devices. Single doors use a rim exit device. This single-point mechanism uses a spring-loaded latch — many have a Pullman-style bolt — to secure the door. This might incorporate a deadlatch feature. This feature, which is built into the lock, makes it so the lock can't be manipulated into opening. Only a key or an inside knob or lever will retract the latch.

Vertical-rod exit devices. There are two styles of vertical-rod exit devices. The standard vertical-rod exit device is surface-mounted. There also is a concealed version, where the vertical rods and the latch mechanism(s) are installed within the door body. A vertical-cable exit device

uses flexible cable instead of rods. Upgrades to existing door installations usually end up with surface-mounted rods.

In special situations, a Less Bottom Rod (LBR) installation might be necessary. Because only the top rod is securing the door, approval from the authority having jurisdiction (AHJ) is necessary for such an application. LBR installations are desired to make passage of wheelchairs and stretchers easier. An advanced type of vertical-rod exit device is a multiple-point lock, which means that more than a single latch point is employed. These locks use vertical rods and a rim exit device mechanism.

Locksmiths devised a method of providing multiple-point locking by adding pins into the hinges that brace the hinge edge of the door. This prevents bypassing the door by popping the hinge pins.

Mortise exit devices. A mortise exit device uses a bar to release a latching mortise lock. The mortise body usually is similar to that used by any other mortise lock. The exit device is surface-mounted on the door and interacts with the mortise case through a special cam or bar that activates to withdraw the latch. Nonfire-rated mortise exit devices can be equipped with dogging mechanisms.

Mortise exit device outside trim might consist of a lever or knob similar in appearance to a conventional mortise lever or knob and a keyed cylinder to control the locked position.

Follow the Code

Upgrading and repairing exit devices can be an important aspect of most locksmiths' activities. Where exit devices are used largely is determined by the Building

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» Yale 6000 exit device



Codes. How the building or areas inside a building are used and the occupancy load are factors. Even so, there are discrepancies between the codes over what occupant load is required.

This highlights an important aspect of the codes. There's more than one "Model Code" and they're revised constantly. You as an installer have to be knowledgeable about what's required in a particular structure in your jurisdiction.

I've worked on projects where more than one AHJ was involved, and they didn't play well together, so you have to be flexible and knowledgeable about your options.

When on the job, in most cases exit devices are already on-site. They were specified at the time the building was built or the tenants took occupancy.

I rarely have had to remove an exit device, but when codes are upgraded or a change is made in a building's walls, construction or use or there's a reclassification of the occupancy type, additional exit devices might be required. (Required doesn't mean the same thing as "allowed" in the world of codes.)

Doing the Work

A contractor often will use a locksmith to supply and install specialty architectural items, such as exit devices, because frequently there are issues associated with keying locks, adjusting doors for proper operation or making substitutions to the hardware schedule to accommodate a change order.

Exit devices are designed to be used and abused and continue to operate. They aren't supposed to be abused while being installed, but I've encountered plenty that have been.

Many security pros don't know how to work with exit devices in all their manifestations. A few do, and it pays off for them. It also could for you.

Here's a roundup of possible mechanical options:

Yale 6000 Series

The Yale 6000 Series exit device can withstand the rigors of multifamily, retail, office and other commercial exits. The series includes a range of functions, including rim, mortise and vertical-rod configurations, and features smooth, quiet operation.

More info: www.yalecommercial.com

Arrow ED910 Series & PEC910 Series

The ED910 Series and PEC910 Series exit devices by ASSA ABLOY company Arrow are similar in function, yet different in form. The ED910 Series is aimed at everyday solutions, whereas the PEC910 Series features a one-piece design that has a permanent end cap, which makes it suited for high-traffic or high-vandalism areas. Both products are BHMA Grade 1



» Arrow PEC900

certified and designed to replace or upgrade existing devices.

More info: www.arrowlock.com

SECO-LARM SD-962AR-36G

The SD-962AR-36G has heavy-duty Grade 1 steel construction, is UL listed and appropriate for metal or wood doors up to 1-3/4 inches thick.

It has a separate deadlocking latch that prevents the use of credit cards or similar means to open the latch bolt.

More info: www.seco-larm.com

Securitech Auto-Bolt MAX

Securitech has brought its automatic multipoint locking to the exit device, either surface-mounted or concealed. The Auto-Bolt MAX series is aimed at high-traffic exits and is available in

double-door applications. It provides up to five points of deadbolt locking protection. A single action of the touchbar retracts all bolts simultaneously, so it meets life-safety, accessibility and fire-code requirements.

More info: www.securitech.com

Detex Advantex Series

Detex's Advantex line has all the types of exit devices.

In addition, the company's online resources are some of the best in the security industry. Products are categorized by market (for example, retail, education, healthcare), with product descriptions and installation instructions, as well as other interesting, useful resources. Detex also provides terrific live tech support, which saves time and money on service calls.

More info: www.detex.com

Marks X-it exit devices

Marks X-it exit devices are aimed at panic and fire exit applications on standard (M9900) or narrow-stile (M8800) doors.

M9900 Panic Exit Devices are a heavy-duty, easily installed solution where high-quality panic and fire listed hardware is necessary. The M8800 Narrow Stile Exit Device is designed for use on all types of narrow-stile single and double doors.

More info: marksusa.com

Precision Hardware APEX 2000 Series

The broad APEX 2000 Series by the dormakaba brand delivers functionality and dependability. The APEX 2000's durable construction allows it to withstand high traffic and high use on a regular basis and is aimed at healthcare and education buildings.

More info: www.precisionhardware.com ■■

Tim O'Leary is an experienced security consultant and a regular contributor to Locksmith Ledger.



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The Key Machine Encyclopedia, Part II

Although not as highly touted as their automatic counterparts, manual machines have several advantages.

When it comes to shopping for a key machine, the choices are almost as varied as the type of locksmithing that the machine is meant to support.

With the rise of internet connectivity, it's no surprise that most of the newest key machines are automatic and computerized. These models deliver functionality that manual machines simply can't, including ever-expanding code databases, firmware upgrades and decoding from an image.

However, as with everything else, although adding electronics to a key machine delivers features otherwise not possible, those features and the conveniences come with a price. Generally speaking, manual single-function key machines cost significantly less than automatic multifunction, or all-in-one, machines.

The Price is Right

Naturally, price is a huge differentiator in the market, but price shouldn't be the only consideration. Bill Mandlebaum, who has 11 key machines of various types in service at his business, says a machine's accuracy and durability are more important than price.

"Price doesn't matter to me as long as I get a good machine that's going to hold up and cut accurate keys," says Mandlebaum, president of ALOA, who has operated The Brass Key in Bowling Green, Ohio, since 1981. Accuracy is "our whole reputation."

Hunter Salazar, business development manager at distributor Banner Solutions, agrees that there's more to it than just price. He adds support, service,



» Framon #2 package

turnaround time for repairs and warranty as important considerations as well.

"I've seen a lot of customers, they're really price-sensitive," says Salazar, who worked at manufacturer Laser Key Products and then distributor H.L. Flake before Flake's acquisition by Banner in spring 2021. "But you have to take into account [that] with a discounted price, you're not going to get the service and warranty" that you might want.

Read the Manual

A key machine's "operation," whether manual, semi-automatic or automatic, speaks to how much control a locksmith has over the cutting process. A manual or even semi-automatic key machine is a less complicated device.

This is advantageous, Mandlebaum notes, because he doesn't have to bother with tech support when it comes to repairs. "I can pretty much fix almost any machine except the electronic stuff," he says. "Manual or semi-manual: Any of those things can be fixed pretty easy."

Of course, unless you're cutting keys on a hand-crank or punch machine, all key machines have electronics to power the cutter, and Mandlebaum adds that one spec he looks for is the motor's power.

"All my machines are 110 [volts]," he explains. "That way if the one in the truck breaks down, I

can pull one right off the workbench, throw it right back in the truck and be right back on the road immediately.” Mandlebaum says he has a sine inverter setup in his truck to power up a key machine.

Key Machine Encyclopedia

The Locksmith Ledger Key Machine Encyclopedia is an attempt to list all key machines in production and offered for sale in North America at the start of 2022. It’s our hope that this will become a living document that will evolve as developments necessitate. The second part, presented here, lists models that operate manually and semi-automatically. The first part, which ran in January 2022, covered automatic machines. (See the full, combined Key Machine Encyclopedia online at www.locksmithledger.com/21247894.)

Products are listed in alphabetical order by manufacturer and then divided by the types of keys cut. NOTE: Not all key machines can cut all types of listed keys out of the box. Additional clamps for an additional cost might be necessary.

Manufacturers categorize key machines differently and use different terms to describe their machines and a machine’s features. We have tried to standardize where possible, but always consult the appropriate manufacturer or your favorite distributor if you have specific questions, particularly with regard to keys cut and the terms of a machine’s warranty.

Locksmith Ledger took great pains to ensure that all information contained here is accurate and up to date. Manual and semi-automatic machines are classified below as All-In-One, Edge, Laser and Specialty. If any errors or omissions are discovered, any updates have been made or models have been discontinued, please contact us at wchristensen@endeavorb2b.com.

Framon

EDGE

#2

The #2 can originate edge (automotive and residential), bit (padlock and safe-deposit box), high-security and Tibbe keys from code. It includes the latest version of Genericode.

- Operation: Manual
- Dimensions: 10-1/2 in. (w) x 17 in. (d) x 8 in. (h)
- Weight: 36 lbs.
- Warranty: 1 yr., freight inc.

#2J

The #2J has been modified to cut detention keys in addition to all the keys that are possible on the #2. A special vise helps to clamp larger keys.

- Operation: Manual
- Dimensions: 10-1/2 in. (w) x 17 in. (d) x 8 in. (h)
- Weight: 36 lbs.
- Warranty: 1 yr., freight inc.

DC-300

The DC-300 can originate from code or duplicate automotive edge keys, including motorcycle keys. An additional carbide cutter will allow it to cut steel keys.

- Operation: Manual
- Dimensions: 16 in. (w) x 10-1/2 in. (d) x 6-1/4 in. (h)
- Weight: 33 lbs.
- Warranty: 1 yr., freight inc.

KX-1

The KX-1 can code-cut cylinder edge-cut keys but is aimed particularly at high-security keys, including Medeco, Kaba PEAKS and Schlage Primus. The machine is set to cylinder manufacturer preferences, but additional kits are available.

- Operation: Manual
- Dimensions: 13 in. (w) x 14 in. (d) x 13 in. (h)
- Weight: 33 lbs.
- Warranty: 1 yr., freight inc.

MD-1

The MD-1 can duplicate edge



» Framon DBM-1

cylinder and automotive keys. It can cut keys up to 4 inches long.

- Operation: Manual
- Dimensions: 12 in. (w) x 15 in. (d) x 6 in. (h)
- Weight: 29 lbs.
- Warranty: 1 yr., freight inc.

LASER

Sidewinder 2

The Sidewinder 2 can originate or duplicate laser keys, including Volkswagen and Audi. Depth and space rods allow for a quick change between code cutting and duplication.

- Operation: Manual
- Dimensions: 6 in. (w) x 14 in. (d) x 10 in. (h)
- Weight: 33 lbs.
- Warranty: 1 yr., freight inc.

Sidewinder

The Sidewinder can duplicate laser keys, including Volkswagen and Audi, but also originate side-milled keys. It can be upgraded to a Sidewinder 2 code model.



» Framon KX-1

Tools & Equipment

- Operation: Manual
- Dimensions: 6 in. (w) x 14 in. (d) x 10 in. (h)
- Weight: 33 lbs.
- Warranty: 1 yr., freight inc.

SPECIALTY

TKM-100

The TKM-100 can originate tubular keys by code. Its self-adjusting collet accepts three key sizes and will cut brass and steel keys.

- Operation: Manual
- Dimensions: 8 in. (w) x 14 in. (d) x 10 in. (h)
- Weight: 33 lbs.
- Warranty: 1 yr., freight inc.

DBM-1

The DBM-1 can cut flat steel keys for safe-deposit boxes, lockers and padlocks. It can duplicate blanks up to 3-1/2 inches long.

- Operation: Manual
- Dimensions: 10-1/2 in. (w) x 16 in. (d) x 6-1/4 in. (h)
- Weight: 33 lbs.
- Warranty: 1 yr., freight inc.

JD-12

The JD-12 can duplicate detention keys. It's preset for paracentric keys but can cut mogul keys through a separate kit.

- Operation: Manual
- Dimensions: 12 in. (w) x 16 in. (d) x 10 in. (h)
- Weight: 35 lbs.
- Warranty: 1 yr., freight inc.

More info: www.framon.com

HPC

EDGE

The Original Blitz

The Original Blitz can cut edge keys by code cards, as well as Tibbe and tubular keys as an option. It also can cut high-security keys, including the new Medeco 4.

- Operation: Manual
- Dimensions: 12 in. (w) x 14 in. (d) x 9 in. (h)
- Weight: 35 lbs.



» HPC The Original Blitz

- Warranty: 1 yr.

The Extreme Blitz

The Extreme Blitz can cut all the keys of an Original Blitz but includes a larger code card deck, the tubular key adapter and free code software.

- Operation: Manual
- Dimensions: 12 in. (w) x 14 in. (d) x 9 in. (h)
- Weight: 35 lbs.
- Warranty: 1 yr.

The Base Blitz

The Base Blitz is aimed at being a second machine and specific, high-volume use. It doesn't come with cutters or code cards but can use any of the Blitz cutters from a primary machine.

- Operation: Manual
- Dimensions: 12 in. (w) x 14 in. (d) x 9 in. (h)
- Weight: 35 lbs.
- Warranty: 1 yr.

The Switch Blitz

The Switch Blitz can cut edge (automotive and residential/commercial), Tibbe or tubular keys by code or as a duplicator. It also can cut high-security keys, including the new Medeco 4, and safe-deposit box keys.

- Operation: Semi-automatic
- Dimensions: 12 in. (w) x 14 in. (d) x 9 in. (h)
- Weight: 39 lbs.
- Warranty: 1 yr.

Power Speedex

The Power Speedex can duplicate edge (automotive and residential/

commercial) keys as well as flat-steel keys as an option. It can accommodate large-bow keys.

- Operation: Semi-automatic
- Dimensions: 13 in. (w) x 16 in. (d) x 10 in. (h)
- Weight: 25 lbs.
- Warranty: 90 days

Premier Speedex

The Premier Speedex can duplicate edge (automotive and residential/commercial) keys as well as flat-steel keys as an option.

- Operation: Manual
- Dimensions: 12 in. (w) x 14 in. (d) x 8 in. (h)
- Weight: 27 lbs.
- Warranty: 90 days

Mini Speedex

The lightweight Mini Speedex can duplicate edge (automotive and residential/commercial) keys as well as large-bow keys.

- Operation: Manual
- Dimensions: 11 in. (w) x 8 in. (d) x 8 in. (h)
- Weight: 17 lbs.
- Warranty: 90 days

Trace-A-Key

The Trace-A-Key can duplicate a wide variety of edge-cut keys, including longer automotive keys. It has a single-casting construction.

- Operation: Semi-automatic
- Dimensions: 12 in. (w) x 16 in. (d) x 13 in. (h)
- Weight: 29 lbs.
- Warranty: 90 days



» HPC Mini Speedex

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Visit the web site below for more information.

www.sargentlock.com

Tools & Equipment

The Punch Machine

The Punch Machine can cut commercial, residential, automotive and furniture edge-cut keys by code. It can punch only flat-side keys.

- Operation: Manual
- Dimensions: 10 in. (w) x 13 in. (d) x 7 in. (h)
- Weight: 23 lbs.
- Warranty: 1 yr.

SPECIALTY

Tubular Duplicode

The Tubular Duplicode can cut tubular keys by code. It can accommodate left- and right-hand cuts as well as pin within pin.

- Operation: Manual
- Dimensions: 16 in. (w) x 5 in. (d) x 5 in. (h)
- Weight: 11 lbs.
- Warranty: 90 days

Tubular Duplicut

The Tubular Duplicut can duplicate standard-size tubular keys. It also can duplicate a key from an HPC Tubular Pick.

- Operation: Manual
- Dimensions: 16 in. (w) x 5 in. (d) x 5 in. (h)
- Weight: 11 lbs.
- Warranty: 90 days

Pocket Cut-Up

The Pocket Cut-Up is a pocket-size code cutter for tubular keys.

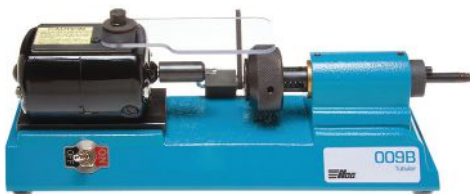
- Operation: Manual
- Dimensions: 4 in. (w) x 2 in. (dia.)
- Weight: 0.8 lbs.
- Warranty: 90 days

More info: www.hudsonlock.com

Ilco

SPECIALTY

009B



» Ilco 009B

The 009B can duplicate seven- and eight-cut tubular keys. It includes a key-positioning device.

- Operation: Manual
- Dimensions: 14 in. (w) x 4-1/4 in. (d) x 4-1/4 in. (h)
- Weight: 8 lbs.
- Warranty: 2 yrs.

More info: www.ilco.us

JMA

EDGE

Vienna

The Vienna can duplicate edge (automotive and residential/commercial) and cruciform keys. Its counter keeps track of the number of keys cut.

- Operation: Semi-automatic
- Dimensions: 16-15/16 in. (w) x 16-35/64 in. (d) x 11-1/32 in. (h)
- Weight: 59.5 lbs.
- Warranty: 5 yrs. mechanical

Vienna Smart

The Vienna Smart can duplicate edge (automotive and residential/commercial) and cruciform keys. It has a built-in storage area for accessories.

- Operation: Semi-automatic
- Dimensions: 16-15/16 in. (w) x 16-35/64 in. (d) x 11-1/32 in. (h)
- Weight: 59.5 lbs.
- Warranty: 5 yrs. mechanical

Berna

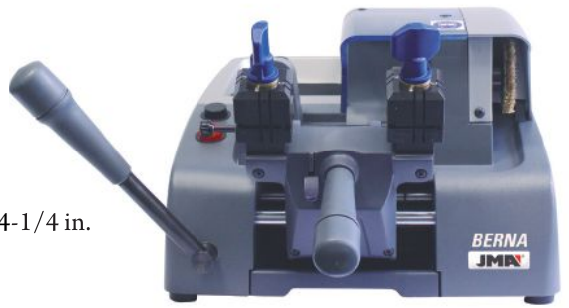
The Berna can duplicate edge (automotive and residential/commercial) and cruciform keys.

- Operation: Semi-automatic
- Dimensions: 13-25/64 in. (w) x 17-1/8 in. (d) x 9-37/64 in. (h)
- Weight: 37.5 lbs.
- Warranty: 5 yrs. mechanical

Nomad

The lightweight Nomad can duplicate edge (automotive and residential/commercial) and cruciform keys. A safety mechanism shuts down the machine if power is lost.

- Operation: Manual



» JMA Berna

- Dimensions: 10-1/2 in. (w) x 6-1/2 in. (d) x 8-1/2 in. (h)
- Weight: 14.3 lbs.
- Warranty: 5 yrs. mechanical

Ecco

The Ecco can duplicate edge and cruciform keys.

- Operation: Manual
- Dimensions: 18-1/2 in. (w) x 9-21/32 in. (d) x 11-1/32 in. (h)
- Weight: 33 lbs.
- Warranty: 5 yrs. mechanical

Ecco Plus

The Ecco Plus can duplicate edge and cruciform keys. It has a four-sided jaw.

- Operation: Semi-automatic
- Dimensions: 20-7/8 in. (w) x 9-21/32 in. (d) x 11-1/32 in. (h)
- Weight: 35 lbs.
- Warranty: 5 yrs. mechanical

LASER

CAPRI

The CAPRI can duplicate laser, dimple and tubular keys. It has a top tray for accessories.

- Operation: Manual
- Dimensions: 16-15/16 in. (w) x 15-11/64 in. (d) x 18-5/16 in. (h)
- Weight: 55.1 lbs.
- Warranty: 5 yrs. mechanical



» JMA Nomad

Neo

The Neo can duplicate laser (including Mercedes-Benz, Volkswagen and Audi) and dimple keys.

- Operation: Semi-automatic
- Dimensions: 10-41/64 in. (w) x 13-11/32 in. (d) x 14-57/64 in. (h)
- Weight: 39.7 lbs.
- Warranty: 5 yrs. mechanical

SPECIALTY

Ecco Bit

The Ecco Bit can duplicate Tibbe and bit (single- and double-blade) keys. It has an option for wave keys.

- Operation: Semi-automatic
- Dimensions: 18-1/2 in. (w) x 9-21/32 in. (d) x 11-1/32 in. (h)
- Weight: 35 lbs.
- Warranty: 5 yrs. mechanical

Ecco RG

The Ecco RG can duplicate wave keys. It has an option for Tibbe and bit (single- and double-blade) keys.

- Operation: Semi-automatic
- Dimensions: 18-1/2 in. (w) x 9-21/32 in. (d) x 11-1/32 in. (h)
- Weight: 35 lbs.
- Warranty: 5 yrs. mechanical

More info: www.jmausa.com

Keyline USA

EDGE

Easy Quattro

The Easy Quattro can duplicate edge (automotive and residential/commercial) and cruciform keys.

- Operation: Manual
- Dimensions: 14-1/2 in. (w) x 14-1/2



» Keyline Falcon



» Keyline 106

in. (d) x 9-1/2 in. (h)

- Weight: 42 lbs.
- Warranty: 2 yrs.

106

The 106 can duplicate edge (automotive and residential/commercial), padlock and cruciform keys. It has an optional carbide cutter.

- Operation: Semi-automatic
- Dimensions: 18 in. (w) x 15 in. (d) x 17 in. (h)
- Weight: 55 lbs.
- Warranty: 2 yrs.

LASER

T-Rex

The T-Rex can duplicate laser (including Volkswagen and Audi), dimple, Tibbe and tubular keys.

- Operation: Semi-automatic
- Dimensions: 12-39/64 in. (w) x 16-35/64 in. (d), 18-45/64 in. (d) w/ chip tray x 19-19/64 in. (h)
- Weight: 52.9 lbs.
- Warranty: 2 yrs.

T-Rex Plus

The T-Rex Plus can duplicate laser (including Volkswagen and Audi), dimple, Tibbe and tubular keys. Its tilting clamp allows for cutting dimple keys without additional accessories.

- Operation: Semi-automatic
- Dimensions: 12-39/64 in. (w) x 16-35/64 in. (d), 18-45/64 in. (d) w/ chip tray x 19-19/64 in. (h)
- Weight: 52.9 lbs.
- Warranty: 2 yrs.

T-Rex Advance

The T-Rex Advance can duplicate laser (including Volkswagen and Audi), dimple, Tibbe and tubular keys. Its tilting clamp allows for cutting dimple keys without additional accessories, and it has motorized tool positioning.

- Operation: Semi-automatic
- Dimensions: 12-39/64 in. (w) x 16-35/64 in. (d), 18-45/64 in. (d) w/ chip tray x 19-19/64 in. (h)
- Weight: 55.1 lbs.
- Warranty: 2 yrs.

303

The 303 can duplicate laser, dimple and Tibbe keys. It includes a storage tray for accessories.

- Operation: Semi-automatic
- Dimensions: 12 in. (w) x 15 in. (d) x 21 in. (h)
- Weight: 51 lbs.
- Warranty: 2 yrs.

SPECIALTY

Arcadia

The Arcadia can cut tubular keys for a wide range of brands. It has a built-in clamp-storage compartment.

- Operation: Manual
- Dimensions: 8-1/4 in. (w) x 15-3/4 in. (d) x 8-1/4 in. (h)
- Weight: 28 lbs.
- Warranty: 2 yrs.

Falcon

The Falcon can cut Tibbe keys by code. Optional clamps allow it to cut high-security keys.

- Operation: Manual
- Dimensions: 15-3/4 in. (w) x 14-1/2 in. (d) x 9 in. (h)
- Weight: 38 lbs.
- Warranty: 2 yrs.

More info: www.keyline-usa.com

Kukai

EDGE

SEC-M10

The lightweight SEC-M10 can duplicate automotive and residential/commercial edge-cut keys.

Tools & Equipment



» Kukai SEC-M10

- Operation: Manual
- Dimensions: 12-51/64 in. (w) x 8-43/64 in. (d) x 9-29/64 in. (h)
- Weight: 13.9 lbs.
- Warranty: 1 yr.

More info: www.uhs-hardware.com

Mul-T-Lock

SPECIALTY

Compact II

The Compact II can cut by code Mul-T-Lock keys for the Classic and Interactive+ (MTL600) series. It cuts to original manufacturer specifications.

- Operation: Manual
- Dimensions: 9-21/32 in. (w) x 13-63/64 in. (d) x 12-7/8 in. (h)
- Weight: 45 lbs.
- Warranty: 2 yrs.

Compact 7X7

The Compact 7X7 can cut by code Mul-T-Lock keys for the 7X7 and Integrator series. It cuts to original manufacturer specifications.

- Operation: Manual



» Mul-T-Lock Compact II

- Dimensions: 9-21/32 in. (w) x 13-63/64 in. (d) x 12-7/8 in. (h)
- Weight: 45 lbs.
- Warranty: 2 yrs.

More info: www.mul-t-lock.com/en-us



» PRO-LOK Blue Punch Key Machine



PRO-LOK

EDGE

Blue Punch Key Machine

The lightweight Blue Punch Key Machine can cut brand-dedicated keys to original specifications. Each machine is preset to handle one or two brands, and 21 different models are available.

- Operation: Manual
- Dimensions: 4 in. (w) x 12-1/2 in. (d) x 8-1/2 in. (h)
- Weight: 12 lbs.
- Warranty: 90 days

More info: www.pro-lok.com

Silca

EDGE

Flash 008

The lightweight Flash 008 can duplicate edge (automotive and residential/commercial) and cruciform keys, including large-bow keys.

- Operation: Manual
- Dimensions: 12-13/64 in. (w) x 9-29/64 in. (d) x 7-51/64 in. (h)

- Weight: 14 lbs.
- Warranty: 2 yrs.

Flash Mobile

The lightweight Flash Mobile can duplicate edge (automotive and residential/commercial) keys, including large-bow keys. It's battery-powered and includes a handle for remote key cutting.

- Operation: Manual
- Dimensions: 12-39/64 in. (w) x 10-3/64 in. (d) x 10-3/64 in. (h)
- Weight: 15.4 lbs.
- Warranty: 2 yrs.

Duo Plus

The Duo Plus can duplicate edge (automotive and residential/commercial), cruciform, bit and high-security keys. It allows for free or controlled carriage movement.

- Operation: Manual
- Dimensions: 20-3/32 in. (w) x 17-23/32 in. (d) x 11-1/32 in. (h)
- Weight: 50.7 lbs.
- Warranty: 2 yrs.

Speed 044 Semi-Automatic

The Speed 044 Semi-Automatic can duplicate edge (automotive and residential/commercial) and cruciform keys, including large-bow keys.

- Operation: Semi-automatic
- Dimensions: 22-27/32 in. (w) x 18-1/8 in. (d) x 9/27-32 in. (h)
- Weight: 31 lbs.
- Warranty: 2 yrs.

Speed 045 Manual

The Speed 045 Manual can duplicate edge (automotive and residential/



» Silca Bravo III with EZ Jaw

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FB-2013	27"	20"	20 $\frac{1}{2}$ "	21 $\frac{1}{4}$ "	14 $\frac{1}{4}$ "	13"	3523	312	2
FB-2714*	33 $\frac{1}{2}$ "	20"	20 $\frac{3}{4}$ "	27 $\frac{1}{2}$ "	15 $\frac{1}{4}$ "	15 $\frac{1}{4}$ "	5982	412	2
CAB2-0-0	15 $\frac{3}{4}$ "	13 $\frac{3}{4}$ "	12 $\frac{1}{4}$ "	2 Drawer Insert		Retail List \$375	28		
CAB4-0-0	15 $\frac{3}{4}$ "	13 $\frac{3}{4}$ "	12 $\frac{1}{4}$ "	4 Drawer Insert		Retail List \$475	33		

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commercial) and cruciform keys, including large-bow keys.

- Operation: Manual
- Dimensions: 15-3/4 in. (w) x 18-1/8 in. (d) x 9-27-32 in. (h)
- Weight: 31 lbs.
- Warranty: 2 yrs.

Bravo III with EZ Jaw

The Bravo III with EZ Jaw can duplicate edge (automotive and residential/commercial) keys, including large-bow keys. It includes a four-position clamp.

- Operation: Semi-automatic
- Dimensions: 15 in. (w) x 20 in. (d) x 10 in. (h)
- Weight: 47 lbs.
- Warranty: 2 yrs.

KD50C

The KD50C can duplicate edge (automotive and residential/commercial) and padlock keys, including large-bow keys.

- Operation: Semi-automatic
- Dimensions: 14 in. (w) x 17-1/2 in. (d) x 11-1/2 in. (h)
- Weight: 61 lbs.
- Warranty: 2 yrs.

LASER

Swift Plus

The Swift Plus can duplicate laser (including Mercedes-Benz, Volkswagen and Audi), dimple and tubular keys. It has a built-in accessories tray.

- Operation: Manual
- Dimensions: 10-1/4 in. (w) x 11-15/64 in. (d) x 12-13/32 in. (h)
- Weight: 26.5 lbs.



» Silca Flash Mobile



» Silca KD50C

- Warranty: 2 yrs.

Twister II

The Twister II can duplicate laser, dimple, Tibbe, tubular and Fichet keys.

- Operation: Manual
- Dimensions: 9-27/32 in. (w) x 14-37/64 in. (d) x 14-37/64 in. (h)
- Weight: 53 lbs.
- Warranty: 2 yrs.

Matrix II

The Matrix II can duplicate laser and Tibbe keys. It has a built-in accessories tray.

- Operation: Manual
- Dimensions: 12-7/32 in. (w) x 15-3/4 in. (d) x 18-33/64 in. (h)
- Weight: 54.2 lbs.
- Warranty: 2 yrs.

SPECIALTY

Speed 046 Manual

The Speed 046 Manual can duplicate bit (safe and safe-deposit) and flat keys.

- Operation: Manual
- Dimensions: 15-3/4 in. (w) x 18-1/8 in. (d) x 9-27-32 in. (h)
- Weight: 31 lbs.
- Warranty: 2 yrs.

Crown

The Crown can duplicate tubular keys of several sizes. It allows for cut-within-a-cut duplication.

- Operation: Manual
- Dimensions: 9 in. (w) x 18 in. (d) x 7 in. (h)
- Weight: 37.5 lbs.
- Warranty: 2 yrs.

More info: www.ilco.us

Xhorse

ALL-IN-ONE

DOLPHIN XP-007

The DOLPHIN XP-007 can duplicate automotive edge, laser, dimple and Tibbe keys. It's battery-powered and includes a handle for remote key cutting.

- Operation: Manual
- Dimensions: 9-23/32 in. (w) x 11-7/64 in. (d) x 13-63/64 in. (h)
- Weight: 30.9 lbs.
- Warranty: 1 yr.

EDGE

CONDOR XC-009

The CONDOR XC-009 can duplicate edge (automotive or residential/commercial) keys. It's battery-powered and includes a handle for remote key cutting.

- Operation: Semi-automatic
- Dimensions: 11-15/64 in. (w) x 6-57/64 in. (d) x 7-7/8 in. (h)
- Weight: 23.8 lbs.
- Warranty: 1 yr.

LASER

CONDOR XC-002

The CONDOR XC-002 can duplicate laser and dimple keys.

- Operation: Manual
- Dimensions: 17-17/32 in. (w) x 11-47/64 in. (d) x 20-43/64 in. (h)
- Weight: 50.7 lbs.
- Warranty: 1 yr.

More info: www.americankey-supply.com, mwkeyless.org ■■



» Xhorse DOLPHIN XP-007

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Adams Rite Previews Wireless Deadlatch

The DL100 is the latest product in ASSA ABLOY's Aperio lineup.

When it comes to electrifying aluminum storefront doors as part of a retrofit, locksmiths basically have a choice: the Adams Rite Steel Hawk 4300 deadlatch and everything else.

Because of the 4300's features and the sheer number of narrow-stile aluminum doors in the market that have the Adams Rite MS prep (said to be in the millions), the choice largely has been a no-brainer, which is why the 4300 has a position of dominance in the market with respect to electrification.

Security pros are about to get another option, one that could be as much of a game-changer as the 4300 was. Put it this way: What if you had the 4300's deadlatch design and features, as well as its MS-prep retrofit capability, but its installation and operation were wireless?

That's essentially what the Adams Rite DL100 Wireless Deadlatch will bring to bear. Locksmith Ledger got an advanced view of the latest product in ASSA ABLOY's wireless Aperio lineup before its expected launch, and we're eager to see it in the field. So are others.

"Wiring a storefront door is a pain," says Larry Schwalb, security engineer with Houdini Lock & Safe of Philadelphia. He mentions the necessity to run wires through the door in the ceiling or basement, if possible, and dealing with a big pane of glass in the door. "Locksmiths have generally wanted to just work in the lock area. They really don't want to go further, so that's why all this wireless technology is enticing."

The DL100 combines a deadlatch that's based off



» The Adams Rite DL100 installed

the 4300 and a Securitron R100 reader. The reader is powered by two AA lithium batteries and connects with the deadlatch via a couple of wires. It can connect wirelessly to an electronic access control system through an Aperio hub.

Technically, the DL100 will replace the A100 in ASSA ABLOY's Aperio lineup, but a big difference between the two products is that the DL100 is a wireless deadlatch, whereas the A100 is a wireless trim for deadlatches, deadlocks and exit devices. As such, the DL100 can replace existing mechanical Adams Rite 4500 and 4900 series deadlatches and 1850 Series deadlocks but won't work with exit devices, says Sylvons Iyavoo, the senior product manager for Adams Rite.

(A wireless trim that could work with exit devices is in "the infancy stage" of development, Iyavoo says.)

Wired Vs. Wireless

The DL100 borrows from the 4300 design, particularly with respect to the 4300's dual two-way winged latchbolts (main and auxiliary), which are known for their capability to repel loiding attacks. However, Iyavoo cautions that the DL100 is meant to be a complement to the 4300, not a replacement.

"We have two different markets for these two products," he says. "There can be a certain percentage of cannibalization [of sales], but I wouldn't say that's going to be substantial."

Iyavoo acknowledges that a wireless product generally is preferable from an installation standpoint, but many customers prefer wired locks over wireless for several reasons. One big reason is that a wireless lock, such as the DL100, has to have battery power, and batteries have to be replaced from time to time.

(Adams Rite says a customer should get two years of service under normal conditions before having to replace the batteries, and replacing the batteries is as simple as removing a screw on the reader and then the reader cover.)

"Some customers do not like it," Iyavoo says of the necessity of changing batteries. "They say, 'I want to install it and forget it.'" A wired lock is powered by the building's electrical grid, and power is always available. He adds that some prefer the reliability of a wired electronic lock, although reliability isn't as much of an issue in reality as it is in perception.

Also, there might be a preference for one of the features that's in the 4300 but not the DL100 — a solenoid. The 4300 has a solenoid to drive the latching and unlatching process; the DL100 has a low-power motor, which is necessary so it can run on batteries, Iyavoo says.

A solenoid allows for instant retraction and access, which can be important in a high-traffic area. In such a scenario, a motor's slight delay might cause preload on the lock, which can lead to reduced performance. Further, a solenoid's louder activation might be preferred under certain conditions.

Battery Issues

Schwalb mentions another drawback for battery power — extreme temperatures. Simply put, batteries tend to have problems in extreme heat or cold. The DL100 has been certified to operate at

temperatures between 14 degrees Fahrenheit and 140 degrees F. The high temperature isn't much of a concern in North America, but the low one definitely is, particularly the farther north one goes.

"This is a great solution as long as the ambient temperature outside is above

14 degrees," Schwalb says. "That's something the specifier needs to be on the lookout for."

Iyavoo says this wouldn't affect 80 percent of the country, but he acknowledges that operation in cold temperatures is a problem. The issue was the

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» The DL100 includes a deadlatch based off the Adams Rite 4300 and a wireless Securitron R100 reader.



same for the HES ES100 wireless strike that was introduced in spring 2021, with one important difference: The ES100 was expected to be used primarily indoors. The DL100, aimed at aluminum storefront doors, was expected to be used primarily outdoors.

The solution: a cold-weather kit that includes a heating element that would be installed inside the reader. This would come as a separate option that could be specified along with the DL100 for areas where cold weather would be an issue.

The kit will be available in two options: battery power or hard-wired. Iyavoo says hard-wiring the heating element of the DL100 is nothing like hard-wiring a standard deadlatch. Installing the 4300 Steel Hawk, for example, would require wiring the deadlatch and reader as well as connecting the reader with an EAC system.

"We're eliminating all that," Iyavoo says. For the DL100 and the hard-wired heating element, all that's necessary would be wiring power to the heating element in the reader. Data communication would remain wireless.

Also, the cost difference is substantial. "If you buy a 4300, for example, you need to buy a separate reader," Iyavoo notes. "To buy a reader and lock separately and have an access control guy come in and connect it all will cost a lot."

As for the battery-powered heating element, Adams Rite still was finalizing the number and type of batteries at publication, but Iyavoo says it will allow the DL100 to operate efficiently at sub-zero temperatures.

Aperio Options

A trend among Aperio products is to include a kit version that's pre-paired with an Aperio hub at the factory. The hub, lock and reader come in one package, and the installer doesn't have to be Aperio-certified to install the pre-paired product. The ES100 has this option, and the DL100 will have it as well, Iyavoo says.

This makes for a simple installation that not only doesn't require pulling wires, but also doesn't require programming in the field. But that isn't a good thing if the project calls for electrification of a series of doors.

"If you want to install multiple locks, you need to be an ASSA ABLOY Aperio-certified partner to install that product," Iyavoo says, because the pre-paired version will include only a hub that allows for a 1-to-1 connection, thus a single lock per hub. "If it's going to be a project with 10-plus or 20-plus locks, then you need to use one hub for multiple locks."

Schwalb says certification would be a boon in the long run because of the potential for doing more work, thus increasing potential revenues. He advises going ahead and getting certified regardless of the noncertified option.

"ASSA ABLOY has a wonderful education program," he says. "You could stay at home in an evening, bring [the class] up on your PC, on your laptop, and get certified in Aperio."

Feature Sets

As far as the product that the DL100 is replacing, there's no comparison, Iyavoo says. The DL100 is a big advancement. One area is in the nature of the product and the difference between an exit trim and a deadlatch.

"The DL100 can retrofit to any of the MS door prep locks, but we could not do that with the A100, so we had some challenges in terms of installing an A100," Iyavoo says. The DL100 "is more of a retrofit solution and is much easier to install."

Another area where the DL100 presents a significant upgrade is that its reader is HID multiCLASS, so in addition to handling low-frequency prox and high-frequency iCLASS standard credentials as the A100 could, the DL100 also handles all versions of MIFARE and iCLASS credentials as well as mobile credentials via Bluetooth.

The DL100 also comes with a door-position monitoring sensor (DPS) included as the default option. (It's optional on the A100.) Request to exit remains an option, and Iyavoo points out that because the DL100 is a deadlatch, it provides free egress when used with paddle or lever trim.

Finally, Iyavoo notes that the DL100 can work on doors that have automatic swing-door operators.

"That's very important because of the requirement of more touch-free solutions in the market," he says, noting that the DL100 will be aimed at commercial, office and educational markets as well as retail. "That's the uniqueness of this product."

Additional Features:

- Emergency override micro-USB port for backup one-time power on the reader
- Reader is IP65 rated for covered outdoor applications
- REX and DPS are field-configurable (by Aperio-certified installer)

More info: www.adamsrite.com ■■

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TOOLS of the Trade

Having the right tool makes the job easier and more profitable.

You probably divide your time among sales calls, service calls and installation of mechanical and electronic access control systems. Many service calls can be resolved quickly, for which you can charge a flat rate and make highly profitable. I like to travel light when doing service, at least until I become familiar with what I'm up against.

Installations take way longer and might require many types of tools to create a professional result. Not having the proper tool for a project can result in injuries to you or bystanders, damage to the part and the work area and wasted time.

As you gain experience, you'll find specific tools that work well for you. Some are used for more than one task while others might be only for specific purposes and particular occasions.

Unfortunately, tools and test equipment can be damaged, stolen or lost, so buying the most expensive tool might not represent the wisest investment for the working locksmith. However, trying to work safely, perform quality work or take accurate measurements while using poor-quality tools isn't smart. You must use discernment.

I collect tools and acquire a new one when a project requires it or when I see one that intrigues me. I also discard damaged, obsolete tools and donate tools to fellow locksmiths to help the team (not the damaged, obsolete ones).

Toolbox List

Glen Davies, CPL, AFDI, GSA-SVT, dormakaba learning leader and door hardware subject matter expert, was asked what he considered to be the core tool requirements for a locksmith. He came up with a pretty good list, which includes tools I also own and use. Here's his list:



Getty Images / By francescomoufotografio

Locksmithing-Specific Tools

- Lock picks
- Cylinder followers
- 0.005- or 0.003-inch pin kits
- Manufacturer-specific pin kits
- Lock pinning tweezers
- Step ladder(s)
- Knee pads
- Door boring jigs
- Through-bolt jigs for common lock brands
- Manufacturer-specific spanner wrenches and cylinder tools

General Tools

- Hole saws for installing locks and cylinders, in the following diameters: 2-1/8, 1-1/2, 1-3/8, 1-1/8, 1, 7/8 and 3/4 inches
- Paddle bits installing locks and cylinders, in the following diameters: 1, 7/8, 3/4, 1/2, 3/8 and 1/4 inches
- Drill bits: cobalt steel and carbide masonry assortments
- Screwdrivers: #1, #2 and #3 Philips, 1/8-inch, 1/4-inch and 3/8-inch flat blade
- Pliers: 6-inch vise grip, straight jaw; 8-inch vise grip, curved jaw; 8-inch slip-joint; 6-inch long nose; and retaining ring (Truarc)
- Files: flat and pippin



» Dremel Multi-Max oscillating tool

- Dremel grinder and bits
- Drills: 1/2-inch chuck corded with T-handle, 20V (min.) cordless drill/hammer drill with T-handle
- Hammers: 16-ounce claw, 16-ounce ball-peen and soft faced
- Chisels: 1-inch wood, 7/8-inch wood, 1/2-inch wood and 1/2-inch cold
- Driver bit assortment
- Security screwdrivers and bits
- SAE tap set
- Allen wrenches: metric and SAE
- Retractable-blade utility knife
- Tape measure
- Levels: 3 feet and 1 foot
- Dial caliper (or digital) (0.001-inch increments)
- Adjustable square
- Scratch awl
- Pin punch set
- Small LED flashlight
- Socket set (SAE)
- Extension cords (heavy duty)
- Power strip
- Adjustable wrenches: 10, 8 and 6 inches
- Pry bars: 7 and 12 inches
- Door wedges
- Wire cutter/crimper
- Hacksaw
- Putty knives
- Bench vise
- Clamps
- Jigsaw
- Wet/dry vacuum
- Dust pan/broom
- Bench grinder
- Lubricants

When it comes to locksmithing, I have a few specific tools to recommend:

Dremel

As an installer who often had to cut electric strikes into aluminum, steel and wood frames, the Dremel was a revelation. It cut by using a high-speed carbide disk and an assortment of other specialized accessories and a high speed in a manageable tool.

More recently, Dremel came out with oscillating tools that are versatile and handy for a variety of cutting tasks. The rotary and oscillating models are the ones I own and use.

It might take a little practice to acquire the skills required to use these tools, and you really should use eye protection.

Ridgid

I've owned and used many cordless tools but have found a home with Ridgid. I own a drill, an impact driver, a circular saw and an oscillating tool by that brand.

They're light and reliable, and the batteries have a lifetime warranty. Many cordless tools become problematic when the batteries age, and replacement batteries can be expensive. Since I got the Ridgid tools, I never have had to purchase another battery.

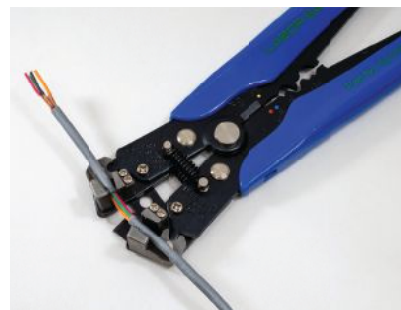
Milwaukee 2202-20 Voltage Detector with LED

I've used meters for a long time, and the Milwaukee Voltage Detector with LED is my choice for residential, commercial and industrial applications.

It can detect between 50 and 1,000 volts AC and has a green "Power On indicator" light so you know the voltage detector works properly before use.



» Klein Tools electrician's scissors



» The LSD EZS wire stripper cuts, strips and crimps wire.

Klein Electrician's Scissors

I used to see electricians and telephone guys walking around job sites with electrician's scissors, not "sophisticated" wire strippers like mine and wondered why. But after you use these for a while, you begin to appreciate what a versatile device they really are.

With practice, you can strip just about any wire from Category 6 solid conductor, low-voltage stranded cable, such as 18-gauge and even solid electrical "house" wire without damaging the wire or yourself. Plus, you have scissors always handy.

I prefer the models that have the unique oblong finger grip and insulated grips. Plastic insulated grips make me feel a whole lot safer than using an uninsulated tool on an electrical cable (even if building managers swear the breaker is off).

When I work with smaller-gauge stranded wire, I still prefer gauged wire strippers though, so I avoid damaging fine strands. The wire used in hinges is the thinnest cable you likely will encounter in electronic access control work. Besides being extremely small gauge, it has Teflon insulation. The Teflon is hard, but the wire is tender. I scrape the insulation, taking care not to nick or damage the wire.

Multitools

These are available in a variety of configurations, from many different vendors, at many prices. I've had

Tools & Equipment

» Labor Saving Devices' 18-foot extendable fiberglass pole for pushing and pulling wire

my current one for at least 10 years, even after lending it to helpers and getting it back in several pieces. I've obtained replacement blades and parts and repaired mine to brand-new condition.

My biggest complaint about my multitool is that it's uninsulated, and I'm nervous using the pliers around anything that has moving electrons.

Labor Saving Devices/GRI

Having attended security trade shows since the early '90s, I became accustomed to dropping by the Labor Saving

Devices booth to see their newest innovation. When Labor Saving Devices was acquired by another industry tool-making legend, GRI, in 2017, I was delighted.

We asked Scott McMurray, director of sales and marketing to fill us in on LSD and GRI.

Locksmith Ledger: Tell us a little about your company.

Scott McMurray: GRI was founded by George Risk in 1966. Always interested in electronics, he was an inventor all of his life. Living in Columbus, Nebraska, George was approached by a group of businesspeople from Kimball, Nebraska, to start a company here, where we remain today. GRI employs 200 in Kimball and 50 in a satellite plant 45 miles away. Quality was an integral part of any of George's



» GRI triple biased high-security contact

companies. He based the raw materials, manufacturing processes and quality control on Military Specification Mil-1-45208. Upon George's death, his son Ken took the helm and now has been followed by Ken's daughter, Stephanie Risk-McElroy.

LL: Got any new and exciting products?

McMurray: New products in the coming year include a redesigned swimming pool access alarm, high-security contacts that will be UL-634 Level 2 and explosion-proof contacts.

Our products list definitely has evolved over the past couple of years from the bread and butter switches for residential alarms to a lot more SPDT and DPDT configurations for commercial and industrial installations.

LL: How did you happen to affiliate with Labor Saving Devices?

McMurray: In October 2017, GRI acquired Labor Saving Devices (LSDI) from Roy Bowling. Roy had been an



» GRI 100-T-W miniature surface-mount contact with screw terminals

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early member on our board of directors and a friend. When Roy decided to retire, he called Stephanie and said, “you are the company I would like to sell to.” It was a good fit.

Owning an installation company himself, Roy developed many of the tools to help him run wire easier and more efficiently — saving time, money and bodily wear and tear. Quality also was front and center on Roy’s mind. For example, LSDI fiberglass rods are immediately recognizable by their bright green color and textured surface. A proprietary manufacturing process makes our Fiberfuse rods wrapped in cellophane and heat-cured. The wrap is removed, leaving a finished rod that’s denser in the center, which provides better shape memory, durability and flexibility without fiberglass



» GRI 3/8-inch mini recessed contact with screw terminals

splinters getting into the installer’s skin.

LL: What are your most popular products?

McMurray: Labor Saving Device’s most popular products would include the Fiberfuse rods, the individual rods and the variety of rod kits; the original Wet Noodle for running wires through walls; ceiling hole cutters; Grabbit poles; fish wires; pull socks — to name a few. There are so many great products that some of them fall off the radar, but they still are just as

valuable in saving time and making a professional-looking installation.

LL: What training resources do you provide?

McMurray: Our in-person training is done at trade shows and by our independent representatives out in the field. GRI and LSDI products are available through our security and electronic distribution network, independent and nationals.

One thing for sure, people love to make YouTube videos, so there’s a variety of installing videos on LSDI products — and a number of them by Roy Bowling himself. Our websites are also a useful source, www.grisk.com, www.lsdinc.com. ■■

Tim O’Leary is an experienced security consultant and a regular contributor to Locksmith Ledger.

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Exceptions In Automotive Locksmithing

No matter the job, there always will be the one car that differs from the others.

From 1988 until 2013, I traveled all over the United States teaching automotive locksmithing. I taught thousands of locksmiths, and one of the things that I stressed at the beginning of most of my classes was “There is always an exception.”

Yes, after you understand the Ford eight-cut system, you can deal with just about any Ford eight-cut lock ... until you try to service the trunk lock on a Ford Focus made between 2000 and 2003. Or you might believe that you know that on all OEM Ford remote head keys (RHK), the remote will program at the same time as the key, until you run into a late-model Fiesta that uses an RHK.

These exceptions are what make automotive locksmithing interesting, at least to me. But when you encounter some of these things unprepared on a busy day, it can be like having a blowout on the interstate during rush hour. Your day suddenly will go from organized and productive to utter chaos.

In this article, I plan to shine a little light on some of these exceptions so you can take them in stride.



» Image 1: 2021 Ford Fiesta

Ford Fiesta RHK

A lot of the current version of the Ford Fiestas sold in the United States (Image 1) use a proximity fob. Programming an extra fob or replacing a lost fob in an all-keys-lost situation is pretty much the same as on any other Ford vehicle. The biggest challenge is to figure out where they hid the programming slot. On the Fiesta, even that's a little strange, but a quick look at the owner's manual solves that problem. Just in case you're curious, it isn't really a slot, but just an indentation on the side of the steering column shroud where you must hold the fob during programming. (Image 2)

When you program an RHK, all of the normal rules apply except that the remote portion of the key must be programmed through an on-board procedure, rather than automatically along with the key. This wouldn't be much of an irritation if the Fiesta used the standard on-board procedure, but, naturally, it doesn't.

For all I know, this might be a common procedure on Ford vehicles sold in other countries, but as far as I know, the Fiesta is the only Ford vehicle sold in the United States that uses the procedure, listed below. The really strange thing about this procedure is that the remote programs after you take the key out of the ignition!

Step 1: After programming all the transponder keys that are necessary to start the car, sit in the driver's seat with the door open.

Step 2: Insert any key into the ignition and cycle the ignition from “OFF” to “ON” three times. Then turn the ignition to the “OFF” position and remove the key.

Step 3: As soon as the key is removed from the ignition, the door locks should cycle to indicate that the vehicle is in the programming mode. If the door locks don't cycle, repeat the above procedure. (I have been told that some vehicles require eight cycles before going into programming mode.)



» Image 2: The programming “slot” for proximity fobs on a Ford C-Max is similar to the “slot” used on the Fiesta.

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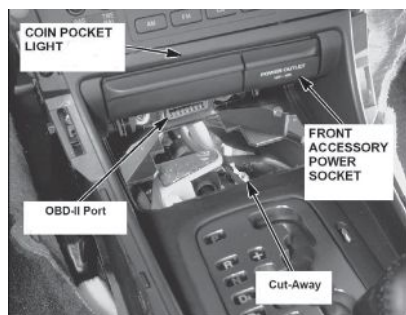
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» Image 3: At the front of the Acura TL console, an unlabeled plastic panel has to be removed before you can plug into the port. (The cut-away section has nothing to do with the OBD-II port.) On some vehicles you might have to remove the ashtray to gain access to the port.

Step 4: As soon as the door locks cycle, press any button on the new key, and the locks should cycle again to indicate that the new key has been accepted. If you have additional keys to program, press any button on each key in turn to program all keys. After all keys have been programmed, insert any key into the ignition and turn it “ON” to exit the programming mode.

This procedure will erase all previously programmed remotes, so if the owner has a working key, it will have to be relearned at the same time as the new key.

When I ran into one of these cars at a dealership recently, the car had two working keys, but only one had a remote that worked. As it turned out, both keys were in good working order, but the second key, an aftermarket or reshelled key that had no logo, never had been programmed. Apparently, someone couldn't figure out how to program the remote.

I started by cutting and programming a new key, after assuming that there was a problem with the key that had the non-working remote. But my new key did the same thing as the existing key. Then, I was off on a wild goose chase to find the correct programming procedure. All of the internet searches that I tried just gave me the standard Ford eight-cycle routine. After several calls to some friends, I finally got the correct information (thanks

to Randy Mize). I soon had three fully functional working keys for the vehicle!

I still am not certain whether all the current production Ford Fiestas use this procedure, but all require onboard programming of the remote.

Honda and Acura OBD Port

For some reason, the engineers at Honda seemed to believe that they should hide the position of the OBD-II port on many of their Honda and Acura vehicles made in the early 2000s. In most cases, it isn't too difficult to locate the port. It often is positioned far to the right under the lip of the dash pointing down, or sometimes toward the front of the vehicle, so you either have to get your head completely under the dash or use a mirror to see it.

But on one vehicle in particular, the Acura TL made from 1999 to 2003, they really outdid themselves. The OBD port is in the forward part of the center console, behind an unlabeled plastic panel, and sometimes an ashtray is mounted in the same area that must be removed to access the OBD port. (Image 3) When you find the port, you often also will find some loose change, cigarette butts or petrified french fries along with it!

Ford Focus Trunk

You might have made keys to the trunk locks on the Ford Focus from 2000 to 2003 and never had any problem. The problem comes if the lock has failed or if you have to rekey it. The power trunk latch mechanism and the lock cylinder are integrated into one device, and, at first glance, there appears to be no way to separate the lock cylinder from the electronic portion. In fact, I poked around on one of these things for several days before I threw in the towel and resorted to an online resource to find out how to take it apart.

The first thing you have to keep in mind is that this lock was made by Hurd, and as with most of the locks that it made, the Focus trunk lock never



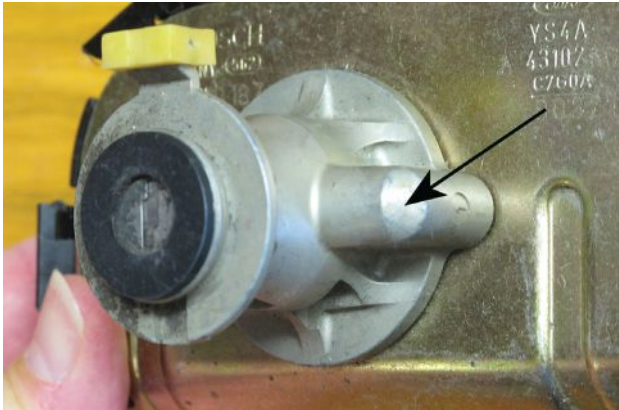
» Image 4: The electronic side of the Ford Focus trunk lock used from 2000 to 2003

was intended to be serviced. But even though the lock wasn't designed to be serviced, just like the Ford 10-cut locks that Hurd made, it still is possible to service the lock. It just isn't easy, and no parts are available.

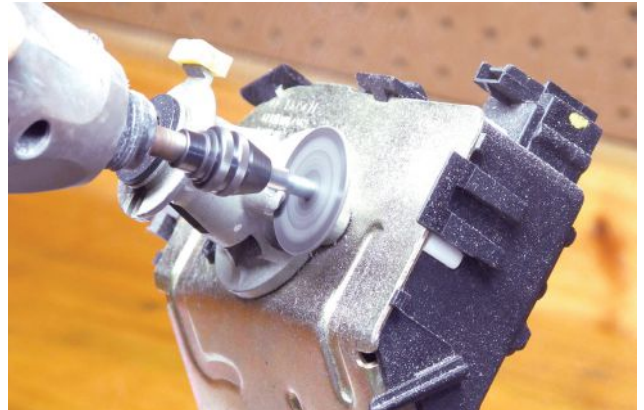
During assembly, the lock cylinder is fitted to the electronic component by inserting the rear end of the cylinder into the electronic module and rotating it until a spring-loaded pin, located in the lock housing, snaps into a hole in the electronic module. This locks it into place. If you must remove the lock cylinder for any reason, you must disengage the pin so the housing of the cylinder can be rotated and removed.

The problem is Hurd didn't provide a poke hole to access the pin. But after you realize where the pin is located, it's easy to use a Dremel tool that has a cut-off wheel to remove the top of the pin chamber. That will expose the spring that you then can remove. Then you can turn the lock over so the pin disengages from the electronic module, and then you can remove the lock cylinder.

Unfortunately, that's difficult to photograph, so in the images, you'll see me use a magnet to pull the pin up and remove the cylinder. If you plan to reuse the cylinder, you can add threads to the inside of the pin chamber and then thread a bolt into place to lock everything down. I chose to cut off the bolt and then use a punch to stake the remains of the bolt into place so it wouldn't unscrew accidentally. (Images 4–8)



» Image 5: The lock cylinder side of the Focus trunk lock. The arrow indicates the chamber that holds the spring-loaded retaining pin.



» Image 6: A Dremel tool is used to remove the top portion of the chamber that contains the spring-loaded retainer. After the top is removed, the spring can be removed.



» Image 7: With the spring gone, a magnet can be used to pull up the retaining pin, and then the lock cylinder can be rotated counterclockwise for removal. After the cylinder has been removed, it can be serviced or rekeyed.



» Image 8: If you have to reuse the lock, you can thread the hole where the retainer spring was located by using a one-quarter-by-20-inch tap and replace the spring with a set screw or a bolt, as I have here. I staked the edge of the bolt to keep it from vibrating out after I cut off the excess bolt.

Ford Mustang Trunk

This next one technically isn't an exception. It's more of a cool technique that works because of an odd feature of the design on the Ford Mustang trunk from 2005 to 2010.

When this version of the Mustang was introduced, the designers didn't equip the vehicle with an inside trunk release. The trunk lock was recessed into the Mustang logo trim, which made the lock difficult to pick. The remote could unlock the trunk, so the vehicle had an electronic trunk release, but there just was no button inside the vehicle to activate it. When an owner locked the keys in the trunk, it was a difficult opening.

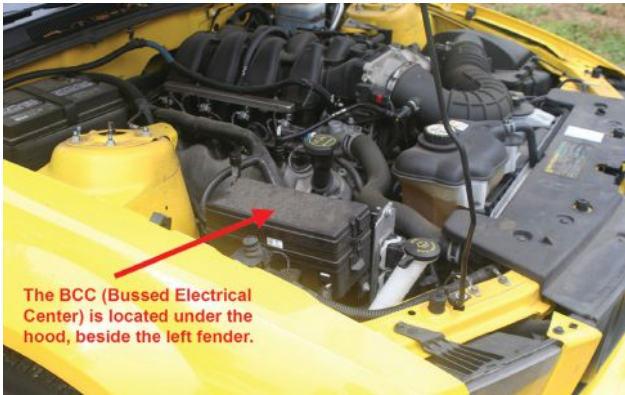
I discovered a simple way to activate the electronic trunk release from under the hood. The trunk release relay is located in a fuse box under the hood, and after you unplug the trunk release relay, you can use a paper clip or something similar to short out two terminals and activate the trunk release as long as the vehicle has power. (Images 9–12)

Oddball Transponder Keys

A lot of time and money gets wasted every year by locksmiths



» Image 9: Because the trunk lock on the 2005–2010 Ford Mustang is recessed into the trim, it can be challenging to pick without using special tools.



» Image 10: The trunk relay is located in the BCC (Bussed Electrical Center), which is located under the hood near the left fender.



» Image 12: After the relay has been temporarily removed, you'll have to use a short piece of wire or something similar to short out the two contacts nearest the front of the car.



» Image 11: The location of the trunk release relay. The relay normally can be removed without using tools.

who assume that a vehicle uses the same transponder key as other vehicles made by the same manufacturer in that same year. The irregularities will trip you up if you aren't careful. I knew a guy who wasted seven tokens on his MVP, as well as seven key blanks, trying to program a Chrysler vehicle with the wrong key! (He incorrectly assumed that the keys that he wasted had defective chips.) Most of this wasted time and money could be avoided simply by checking key-blank references, but we all make the mistake of assuming things from time to time.

The ones that get me most often are the 2000–2005 Ford Focus, the 2001–2004 Ford Escape and the 2000–2006 Lincoln LS. These vehicles use the standard H-75 keyway but are equipped with an oddball “encrypted” transponder that only was used for the years listed.

If you look up those three vehicles, you'll see that two of them take the H-86PT key, while the Lincoln LS uses the H-74PT key. Both keys use the same chip, but the H-74PT is slightly longer to accommodate the in-dash ignition of the Lincoln LS. The

difference in length is small, but the H-86PT is too short to work on the Lincoln LS. The H-74PT will work on all three, which is why that's the blank that I stock.

The Z-Keyway

When General Motors replaced the 10-cut system (75 Groove) with the Z-Keyway (93 Groove), most, but not all, of the vehicles equipped with the Z-Keyway also got the newer “Circle Plus” (Philips 46 crypto) chip. For a few years, some vehicles used the Z-Keyway but kept the older PK3 chip (Megamos ID 13). And just to add to the confusion, some vehicles kept the older 10-cut key but got the newer “Circle Plus” or “PK3+” chip! I've put together a chart of these exceptions or oddballs, but I make no claim that it's perfect or complete.

In summary, there always are exceptions to every automotive locksmithing rule, and the quickest way that I know to waste time and money in this business is to assume that you know it all. This might be the one area where the codesmiths outflank locksmiths, because they have to look up everything! Take a few seconds before you dive into a job to verify that what you know is actually correct. ■■

Steve Young has been a locksmith since 1973 and has trained and taught locksmiths since 1988. He is a frequent contributor to LocksmithLedger.

Make	Model	Start Year	End Year	Keyway	Chip	STRATTEC	Ilco
Buick	LaCrosse	2005	2009	Z-Keyway	PK3	692138	B107PT
Buick	Terraza	2005	2006	Z-Keyway	PK3	692138	B107PT
Cadillac	CTS & CTS-V	2003	2007	10-Cut	PK3+	5928825	B112PT
Cadillac	STS	2005	2007	10-Cut	PK3+	5928825	B112PT
Pontiac	Grand Prix	2004	2008	Z-Keyway	PK3	692138	B107PT
Chevrolet	Uplander	2005	2006	Z-Keyway	PK3	692138	B107PT

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Morse Watchmans Acquired by TouchPoint

» Morse Watchmans, an industry leader in key control and asset-management systems, has been acquired by TouchPoint, a privately held diversified global growth company focused on engineered products in growth markets where the touch point is a differentiating factor. Morse Watchmans will join TouchPoint's Intelligent Inventory Management platform, which focuses on developing inventory management solutions that enable the secure, accurate and efficient management of consumable inventory and high-value assets.

"We are thrilled to become a part of the TouchPoint portfolio, which will help us to drive value to a greater audience through our key and asset management solutions," says Tim Purpura, Morse Watchmans vice president of global sales and marketing. "Asset management is a fast-growing segment of the security market, and we will continue to develop innovative technology solutions that serve this segment."

Morse Watchmans' suite of key- and asset-management products includes KeyWatcher Touch, KeyWatcher Fleet for

fleet-management applications, AssetWatcher for small valuables and devices, KeyPro Software and KeyRings.

TouchPoint, based in Concordville, Pennsylvania, focuses on ac-

quiring and building niche, high-growth engineering and manufacturing businesses where technology and human touch points make a tangible difference to the end user. The current TouchPoint portfolio is made up of three platforms:

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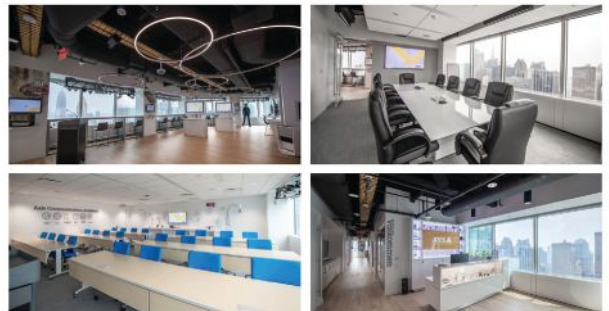
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» Axis Experience Center

Axis Experience Center Opens

» Axis Communications' Axis Experience Center (AEC) in New York City has opened. It provides area business leaders, security pros and system integrators with direct access to the latest in network solutions and dedicated technology specialists.

The new AEC is the 10th in the Axis Americas network. Other locations are in Boston; Chicago; Dallas; Fort Lauderdale, Florida; Los Angeles; San Jose, California; Washington, District of Columbia; Mexico City; Sao Paulo, Brazil; and Toronto, with several more scheduled to launch in 2022-23.

The New York City Axis Experience Center features the newest Axis Q, P and M series network cameras as well as the latest in access control, audio and intercom solutions.

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» Property managers can put more access control management in the hands of their residents without compromising security by using dormakaba's new Community software Resident Visitor Management feature.

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Residents can create and manage PIN codes, including single-use, date and time-specific use, or multiple-use access. By using the BlueSky app, residents can provide access for package and food deliveries, cleaners, visits by family and friends, dog walkers and maintenance repairs.

A full range of features meet the evolving multihousing access requirements, including generation and management of PIN code and mobile key access credentials through dormakaba's enhanced BlueSky app, as well as advanced PIN code management, resident access to visitor history and centralized auditing of all common access points.

More info: dormakaba.com



People in the News

» **SALTO Systems North America** announced its new technical sales team, which will serve as a conduit between sales activity and technical knowledge to enhance ecosystem partnerships.

Vasili Kourelos, SALTO senior technical sales lead, manages the team. Prior to joining SALTO in 2021, Kourelos worked as an electrical engineer in South Africa focused on turnkey building solutions that involve access control, power and lighting services.

"As integration partnerships become more and more important in this industry, I'm excited to lead the first integration-focused specialist team in North America. We will streamline the way we identify and onboard our future ecosystem partners while re-energizing and simplifying the partnerships already in place," Kourelos says.

Roland Smith has been named technical sales lead for the SALTO Pro-Access SPACE Platform. Smith has been with SALTO for 8-1/2 years and served as



» **Vasili Kourelos**



» **Roland Smith**

solutions architect and product implementation manager in the hospitality vertical.

As technical sales lead for the SALTO KS Platform, **Miles Ethridge** will use his vast SALTO KS knowledge and client-first approach to set the standard for SALTO platform partnerships. Ethridge has been with SALTO for seven years.

Nicholas Buffington serves as product manager and will lead SALTO hardware and software communications as SALTO's offerings continuously evolve. Buffington has been with SALTO North America for five years and served as technical support manager and technical support specialist.

More info: www.salto.us



» **Miles Ethridge**



» **Nicholas Buffington**



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New Products

WedgeCo Picks & Turning Tool

WedgeCo has introduced three tools aimed at locksmiths:

- The 2000 Tension Wrench/Lock Turning Tool is a heavy-duty 1mm stainless steel tension wrench that has a rubber grip.
- The 4000 is a mini four-blade automobile pick.
- The 6000 is a stainless steel automobile pick that has a rubber grip.

The tools are meant for picking Chevrolet, Ford, Chrysler and Jeep automobiles, as well as semi trucks and double-sided wafer locks. However, they aren't designed to open Chevrolet and GMC vehicles from the 1970s and 1980s that have sidebar locks. In addition, the picks shouldn't be used on Honda laser-cut vehicles, because the vehicles have thin split wafers that are designed to jam.

The tools are available at participating distributors.

More info: www.wedgeco.com

» Request Information: www.locksmithledger.com/21250466



Rosslare AY-K35 Multi-Smart reader

The AY-K35 Multi-Smart reader from Rosslare features multicredential technology and Open Source Device Protocol secure-channel communication to bring more versatility, scalability and security to physical access control, without the necessity to replace existing credentials.

The AY-K35 supports near field communication and Bluetooth mobile credentials, in addition to 125-kilohertz FSK and ASK, 13.56-megahertz and MIFARE Classic Sector credentials. With the AY-K35, organizations can accommodate users on an individual level, which reduces operational costs without compromising security or functionality.

The reader is dust- and water-resistant and includes vandalproof and antimicrobial properties to reduce the risk of contamination while increasing security.

More info: osslaresecurity.com/products/multi-smart-readers

» Request Information: www.locksmithledger.com/21251904



Codelocks KL1000 G3 NetCode

Codelocks introduced its newest KitLock, the KL1000 G3 NetCode. The locker lock combines the style and functionality of the popular KL1000 G3 KitLock with the

convenience of Codelocks' NetCode technology, which enables administrators to generate temporary date- and time-sensitive access codes. The KL1000 G3 NetCode shares the same fittings and fixings as the KL1000 Classic+, so existing installations can be upgraded and retrofitted easily.

The KL1000 G3 NetCode can be set up to provide short- or long-term access for users and includes all the features introduced with the KL1000 G3, including a key-override function, easy access to the battery compartment and the option to include Slam Latch for fast "push shut" closure. The NetCode Function enables lock administrators to generate a single-use code via the online Codelocks Connect Portal or by using the Codelocks Connect Application Programming Interface.

KL1000 G3 NetCode has a modern chrome-effect finish that reflects the lock's surroundings. Customers can choose to add Clean by Codelocks, an optional antibacterial finish.

More info: www.codelocks.us/kl1000-g3-netcode-kitlock-locker-lock

» Request Information: www.locksmithledger.com/21251010



ProdataKey QR Reader

ProdataKey (PDK) introduced a QR Reader that delivers contactless QR and bar-code scanning as part of a PDK access control solution. The device is aimed at use at stadiums, theaters, fitness centers, hotels, convention centers, multi-tenant properties and other facilities where temporary access to restricted areas is permitted to an ever-changing group of ticketholders or guests. Proximity cards and PIN codes also can activate the QR Readers, which allows the use of the same security credentials used elsewhere in a facility.

More info: www.prodatakey.com/qr-reader

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March 9-11: IML California Expo, Universal City, California. Classes March 9-10, Expo March 11. More info: www.imlss.com

March 22-25: ISC West, Sands Expo Center, Las Vegas. More info: www.iscwest.com

March 29-31: National Facilities Management & Technology Conference, Baltimore Convention Center, Baltimore. More info: www.nfmc.com/baltimore

» APRIL

April 4-9: Safetech 2022, Lexington, Kentucky. Classes April 4-8, trade show April 9. More info: www.savta.org

April 13-15: IML Washington Expo, Renton, Washington. Classes April 13-14, Expo April 15. More info: www.imlss.com

April 20: Security Canada East, Laval, Quebec. More info: www.securitycanada.com

April 24-29: SHDA Industry Advancement Summit, Frisco, Texas. More info: www.shda.org

» MAY

May 27-28: Just Cars Auto Expo 2022, Phoenix. More info: www.justcars.us

» JUNE

June 22-24: IML Colorado Expo, Denver. Classes June 22-23, Expo June 24. More info: www.imlss.com

» JULY

July 24-30: ALOA 2022, South Point Casino, Las Vegas. Classes July 24-28, Security Expo July 29-30. More info: www.aloa.org/convention

» SEPTEMBER

Sept. 12-14: GSX 2022, Atlanta. More info: www.gsx.org

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» ONGOING

Alarm Lock, Marks USA and NAPCO Seminars: www.alarmlock.com/seminars

Allegion Security in 30 Webinars: us.allegion.com/en/campaigns/Security-in-30.html

ASSA ABLOY University Webinars: www.assaabloyacademy.com

Detex webinars: www.detex.com/upcoming-training/webinars

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YEARS AGO

Jerry Levine tested the durable **Pacific Lock** “hockey puck” padlock. Lori Greene explained code requirements for electromagnetic locks. The IBC section, Electromagnetically Locked Egress Doors, allows a door-mounted release device. When selling video surveillance, it’s all about balancing quality, technology, customer support and price to match your customer’s requirements for each specific application, according to an article by Tim O’Leary. O’Leary also wrote about a single-camera system from **Dakota Alert**. Jerry Levine programmed **Keyless Ride** K2 Forge universal keyless-entry remotes for a 2003 Honda Civic and a 2002 Honda CR-V. With the **Trine** wireless controller and transmitter, doors can be unlocked remotely by using a fob. Gale Johnson took a first look at the new **Kwikset** SmartCode deadbolts.

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YEARS AGO

Jerry Levine reported on the changed lock system being used by the 2000+ Pontiac Bonneville. Richard Formica serviced the locks on a Ford Explorer Sport Trac. Jerry Levine offered a short course on Picking Made Easy. Tiny serviced the locks on a 1999 Kia Sportage. Jerry Levine showed how to do some body work on metal doors to eliminate old, unwanted holes. Jerry Levine reported on **ASSA ABLOY**’s purchase of **HID**. James Glazier suggested forensic locksmithing as an interesting career, particularly in the realm of auto theft. Tim O’Leary explained when and where to install exit devices. Donald LaGasse offered business guidance on anger management. Hubert Curry explained key-machine modifications necessary when duplicating Peaks keys. Jerry Levine explained how Ford changed its transponder key systems. Milt Wolferseder provided a history of round door safe locks as he described the virtues of a **Mosler** round door safe designed by a famous industrial designer.

Allan B. Colombo

It’s with sorrow that Locksmith Ledger announces the death of Allan B. Colombo, who died in December 2021. Allan, a trade journalist, has been a contributor to Locksmith Ledger for decades. He wrote about multiple topics, but his specialties were electronic access control and alarms and video.

Allan, 71, was a lifelong resident of Canton, Ohio, as well as a member and past president of the rotary club. He is survived by a wife, two daughters, three stepchildren, 12 grandchildren and five great-grandchildren.

“Al loved the electronic security industry,” says Steve Lasky, editorial director of Locksmith Ledger. “He was a true technician. He began to write for one of our security magazines more than two decades ago and has been working as a freelancer for us ever since. Al began to write for the Ledger when our footprint into electrics increased. He understood the locksmith and how they related to the technology.

“Al will be missed by the industry and by us at Endeavor and The Locksmith Ledger.”

Allan’s final piece for Locksmith Ledger, “The Importance of Access Control Accessories,” ran in the December 2021 issue:

When we think of electronic access control (EAC), we typically think in terms of host computers, cloud-based SaaS platforms, printers, network bridges, PoE Switches, readers and the many types of credentials that clients might want.

“We rarely give the accessories much thought, not to say we ignore them altogether,” says Nick Markowitz, owner of Markowitz Electric & Integration in Verona, Pennsylvania. “But when you stop and think about it, much of the top end rides on the effectiveness and quality of the accessories at the bottom. This is where the wear and tear on an access system really occurs.”

In this story, we’ll present a few of the accessories that are used every day, sometimes without a thought about it. We’ll look at common demands, cures and best practices with regard to these accessories.

Security pros know and understand the importance of each and every perimeter door in a customer’s commercial, industrial and institutional facility. Because these doors get a lot of wear and tear, so do the accessories on them.

Probably one of the most notorious accessories for this is the ordinary door cord that links door-mounted electrified locks, strikes and other devices to an EAC door controller.

Read the full article online at www.locksmithledger.com/21243418



» Allan B. Colombo

The Back Page and You!

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